

THE *Soybean Digest*

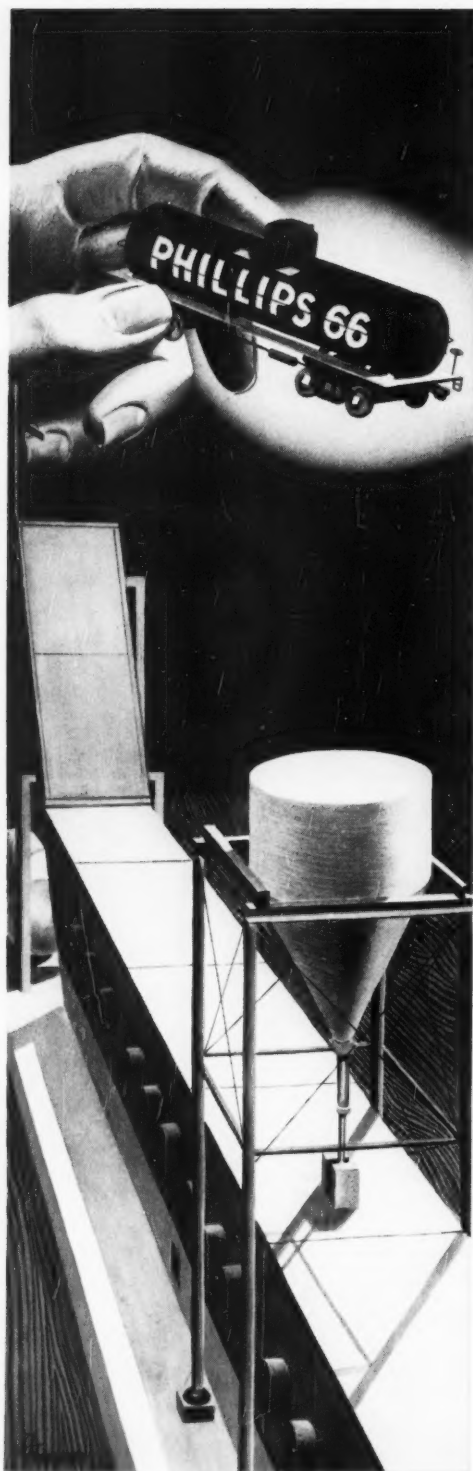


Geo. M. Strayer reports from Europe. (See page 4.)

Official Publication
AMERICAN SOYBEAN ASSOCIATION

VOLUME 10 • NUMBER 1

NOVEMBER • 1949

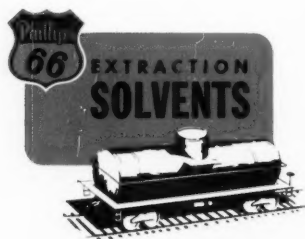


GET HIGH QUALITY PRODUCTS EVERY TIME

WITH PHILLIPS 66

Successful Solvents

- You save on Phillips 66 Solvents—their extremely narrow boiling ranges mean no light ends to lose, no tarry petroleum residues to contaminate your meal.
- Unvarying *high quality* and *uniformity* of Phillips 66 Solvents is assured because they are produced under strict supervision to meet rigid specifications.
- Regular—and emergency—orders for Phillips 66 Solvents can be shipped within hours after the order is placed.
- Our advice and technical assistance on how to get the best results with your Phillips 66 Solvents are at your service.



Typical Boiling Ranges

Normal Hexane	151—156 F
Methylpentanes	139—145 F
Normal Heptane	203—209 F

PHILLIPS PETROLEUM COMPANY
CHEMICAL PRODUCTS DEPARTMENT
BARTLESVILLE, OKLAHOMA

WRITE US—for information on Phillips 66 Successful Solvents for soybean, cottonseed, flaxseed, tung nut, rice bran, corn germ, castor bean, alfalfa, animal fat and other oil extraction industries.

THE Soybean Digest

REG. U. S. PAT. OFF.
HUDSON, IOWA

Business, publication and circulation offices, Hudson, Iowa.
Editor, Geo. M. Strayer, Managing Editor, Kent Pellett.
Business Manager, Geo. McCulley, Director of Circulation,
Gene Taylor.

Advertising representatives: Ewing Hutchison Co., 35 E.
Wacker Drive, Chicago 1, Ill.

Vol. 10 NOVEMBER * 1949 No. 1

Published on the 10th of each month at Hudson, Iowa, by the American Soybean Association. Entered as second class matter November 20, 1940, at the postoffice at Hudson, Iowa, under the Act of March 3, 1879. Forms close on 25th of month preceding. Subscription price to association members, \$2.50 per year; to non-members, \$3.00 per year; Canada and other members of the Pan-American Union, \$3.50; other foreign, \$4.00.

IN THIS ISSUE

	page
Editor's Desk	4
Ohio Margarine Battle	6
Growers	8
Soybean Possibilities in Germany	13
J. L. CARTTER AND GEO. M. STRAYER	
Animal Protein Factor	14
JAMES C. FRITZ	
New Soy Product—Gelsoy	17
A. C. BECKEL, P. A. BELTER AND A. K. SMITH	
New Glidden Hormones	19
Incentives for Research by ASA	20
PAUL D. BOONE	
New Facts about Soy Oil and Protein	24
History of American Soybean Association	28
E. F. JOHNSON	
Soybeans in Romania	32
VLADIMIR POPOVSKI	
European Market for Soybeans	34
Indiana Soybean Day	36
Successful Soybean Festival	38
CARE Packages Use Soy Products	39
BURL BRANT	
November Crop Report	41
Publications	48
Grits and Flakes	50
Washington Digest	58
PORTER M. HEDGE	
Market Street	59
In the Markets	61
Press	65
Letters	66

THE AMERICAN SOYBEAN ASSOCIATION

OFFICERS: President, John W. Evans, Montevideo, Minn.;
Vice President, Jake Hartz, Jr., Stuttgart, Ark.; Secretary-
Treasurer, Geo. M. Strayer, Hudson, Iowa.

DIRECTORS: Jake Hartz, Jr., Stuttgart, Ark.; C. G. Simcox, Assumption, Ill.; LeRoy Pike, Pontiac, Ill.; Ersel Watley, Fort Wayne, Ind.; Chesler Biddle, Remington, Ind.; Geo. M. Strayer, Hudson, Iowa; Howard L. Roach, Plainfield, Iowa; John W. Evans, Montevideo, Minn.; Henry I. Cohn, Sr., St. Louis, Mo.; O. H. Acom, Wardell, Mo.; G. G. McIlroy, Irwin, Ohio; Calvin Heilman, Kenton, Ohio; John Dries, Saukville, Wis.; and R. H. Peck, River Canard, Ont.

FIELD SERVICE DIRECTOR: Paul C. Hughes, Hudson, Iowa.

NOVEMBER, 1949



Newly
Designed
Non-breakable

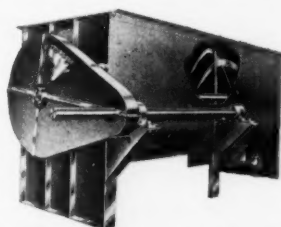
TROUGH ENDS

These trough ends are made of plate steel bodies with inter-changeable and detachable ball or babbit flange bearings. These trough ends were designed for longer life, quicker, easier and more economical change-overs. On these units only the hub bearing wears out leaving the trough end unharmed. Therefore in your change overs the price of the hub bearings are only about one half the price of the old solid piece trough ends. Our counter shaft trough ends are of this same design. Shipments on both units can be made from stock. We manufacture a complete line of screw conveyors and accessories and shipments can also be made from stock.

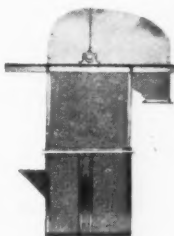
Heavy Duty

BATCH MIXERS

Built to last



Made of all steel, extra heavy duty welded construction. Capacities ranging from 1, 1½ and 2 ton and are made even larger to your individual specifications. Our engineers will be glad to assist you with your mixing problems. Batch mixers manufactured by Industrial are acclaimed by the mixed feed industry, chemical plants, oil and grease manufacturers, food mixers and many other industries throughout the nation as the best batch mixer they've ever operated. Each and every mixer manufactured in our modern plant is given special care in its fabrication and assembly. This results in better mixtures and better performance.



BUCKET ELEVATORS

Built
to your
Specifications

All metal elevators complete with head, boot, legging and machinery made to your individual specifications. This is an all metal unit and insures longer wear and dust-tight performance. Head and boot is furnished with shaft mounted on ball or babbit bearings. Boots come with large slide clean out doors. Furnished with cotton or rubberized belt and high speed cups.

INDUSTRIAL MACHINERY COMPANY Incorporated

2300 South Main Street

Fort Worth 1, Texas

ENGINEERS MANUFACTURERS

Elevating
Conveying
Equipment

Hoisting
Mixing

EDITOR'S DESK

IT'S TIME TO CLEAN HOUSE

Much of Europe has had an exceptionally dry season in 1949, and fodder will be at a premium during coming months. By fodder the European means livestock feed—not rough feed in the sense in which we Americans use the term.

Imports of soybean oil meal into several of the European countries will be heavy if dollar exchange is available. Preferable to most of those countries, however, will be the purchase of whole soybeans, with the processing to be done within their own borders.

The pattern of European buying is now being formed. Sources of supply utilized now will in all probability continue to be patronized. Today's supplier will have the inside track.

The United States is probably the world's largest producer of soybeans today. Acreage may increase during the next decade as other crops are restricted. Soybean acreage will continue to expand so long as it is profitable to the grower to expand it.

Foreign markets will be an important factor in the decisions during the next decade. If buyers like and want our soybeans the crop will continue to be a profitable one.

Through a period of years European buyers had learned that soybeans from the U. S. were of superior quality. But during the past 2 years we have apparently done everything possible to spoil our market hopes. Cargo after cargo of soybeans of definitely inferior quality have been sent into Central Europe. Dockage, damaged beans, cracked beans and foreign material have been way out of line. Cleaning losses have been far in excess of reasonable expectations. Poisonous materials have been included. The buyers are already thinking in terms of soybeans procured elsewhere—and strangely soybeans from Manchuria and South America are being offered in Germany and Holland today.

Soybean producers are to blame for marketing soybeans in such condition. Local soybean buyers share in the blame as they allow mixtures of other grains and foreign material to enter. Commission houses and shippers are to blame for allowing the loading of off-grade and sub-standard soybeans. And governmental officials in CCC and buyers for the Army are not without blame when they foist upon a buyer in a helpless country soybeans which definitely are off-grade and sub-standard. With a major portion of the buying being done by governmental agencies in European countries and a good proportion of the soybeans being supplied by our own governmental agencies, a portion of the blame must rest with officials of those agencies.

The time has come for action—action toward cleaning up handling of commodities and putting it on a basis wherein trading on a basis of mutual confidence can be reestablished. Germany took the buying of oilseeds out of the hands of her governmental agency in Mid-October, returning the buying to private hands. Other countries will follow. It is time for us to clean up the junk and ship soybeans of which we can be proud.

If we do not we will find ourselves whistling for a market which went right past us and landed with people who knew the value of supplying a good product at a reasonable price and doing it consistently.

AGRICULTURE IS BEING OUTSOLD

Agriculture needs more and better salesmen. It needs men to champion its cause and sell its products. It needs to place those men in key positions in government, for whether or not we like it government is entering into business more and more each day. It needs to place those men in key positions on the basis of their abilities and worth, not through political maneuvering.

We are consistently being outsold abroad. And we do nothing about it. We accept it as inevitable. It is not—it is premeditated by others. A good example is the ECA program. It is not and should never be regarded as a means of disposing of agricultural surpluses. It is not a relief program, but rather a rehabilitation program. It must continue on that basis.

But industry and labor are outselling us. As mission chiefs in the agricultural nations of Europe we have businessmen and labor leaders—not agricultural men. Yes, we have an agricultural advisor in the major ECA missions, but his role is subservient to others. When funds are allocated and decisions made at the top level they are made by men who think in terms of drill presses and textiles and steel and coal. So—the ECA dollars—too many of them—go for those products. Too few dollars go for the purchase of foods and agricultural raw materials for processing purposes.

Agriculture is being outsold consistently—and it is time our leadership realized it and made some amends.

WON'T LOSE ON 1949 STORAGE

More 1949-crop soybeans apparently went into storage than earlier seemed likely. But not as many as should be stored to place producers in the best marketing position.

Many growers have been short of storage space due to a big supply of other crops. They seemed disposed to sell their soybeans from the combine if the price was favorable. But with prices hovering below support level many changed their minds.

Producers who placed their beans under loan this year have nothing to lose. They are sure of support price and the 7-cents-a-bushel storage allowance. And they will be in position to take advantage of any price rise that follows the harvest season. If past experience is a guide, such a rise will pay the costs of new storage within a year or two.

First two editorials this month were again written by Editor Geo. M. Strayer in Europe, where he and J. L. Cartter, of the U. S. Regional Soybean Laboratory, have spent the past 6 weeks on an ECA mission. The picture of Strayer on the front cover is there without his knowledge or permission. When he was in the office he would not permit it. But while he is gone we publish it as a small but we think well deserved tribute to a leader in the industry . . . and to the boss.—K. P.



**YOUR
BRAND**

***Stands Out
on***

FULTON TEXTILE BAGS



Printing on bag fabrics is an art developed by many years of experience. To get best results, brands should be technically designed for bag printing. On either cotton or burlap bags, Fulton artcraft printing will give you a job that will make your brand stand out.

**WE CAN SUPPLY YOU WITH ALL TYPES OF
TEXTILE OR MULTIWALL PAPER BAGS**

***Fulton*
BAG & COTTON MILLS**

- New Orleans
- Atlanta
- Denver
- Minneapolis
- New York City
- St. Louis
- Dallas
- Kansas City, Kans.
- Los Angeles



"Let's All Join in!"

ACTIVITIES OF YOUR ASSOCIATION

OHIO MARGARINE BATTLE

A bitterly fought campaign to get out the vote for the Ohio Nov. 3 election on the yellow margarine issue closed with the American Soybean Association finding itself on opposite sides of the fence with the butter interests and the Ohio Farm Bureau Federation as well.

The Association moved into the fight when it became apparent to ASA officials that the Ohio Farm Bureau was ignoring the interests of 52,000 soybean-growing farm families in the state in supposed favor of less than 39,000 families with a stake in butter.

The Ohio farm organization opposed repeal of the Ohio law that prohibits the sale of yellow margarine. Among its acts was refusal of an advertisement that would have presented the margarine point of view for publication in Ohio Farm Bureau News. The ad was entitled, "Soybean Farmers: Wake Up!" and

was signed by the Association of Voters for Yellow Margarine.

American Soybean Association spokesmen contended that the issue of the election was the right to sell soybean oil in an unrestricted market. When it became apparent that the Ohio Farm Bureau would not permit its members to hear both sides, Association leaders went to work.

ASA directors in Ohio and Paul Hughes, field service director, set up county committees to present the issue to the voters. They appealed to Association members to get the facts to the voters in their respective communities—and to vote themselves.

Butter propaganda sought to convey the following impressions: 1—Yellow margarine would ruin the Ohio butter industry. 2—Manufacturers and handlers would make a killing from colored margarine by selling it at about the same price as butter. 3—Margarine offers only a small market for soybeans. 4—Soybean oil will be discarded by mar-

garine manufacturers any time they can obtain cheaper foreign oils.

The Association countered by mailing a folder to 64,000 farm families in the Ohio grain area. Stated the folder: "Margarine is the second biggest market for Ohio's refined soybean oil. It is a market that can be expanded with benefit to all.

More Margarine

"Ohio produces nearly twice as much margarine as it does creamery butter. There is room for both."

Calvin Heilman, ASA director from Kenton, Ohio, declared, "Soybean farmers are being organized by the American Soybean Association to gain their right to market their product in a form and color pleasing to the Ohio consumer.

"The total sale of yellow table spread in Ohio has been hampered by the fact that there has not been enough butter to go around and many people do not want to bother coloring their margarine at home. The Ohio housewife has a right to buy margarine already colored and an attempt to deprive her of that right can only result in bad relations for Ohio agriculture."

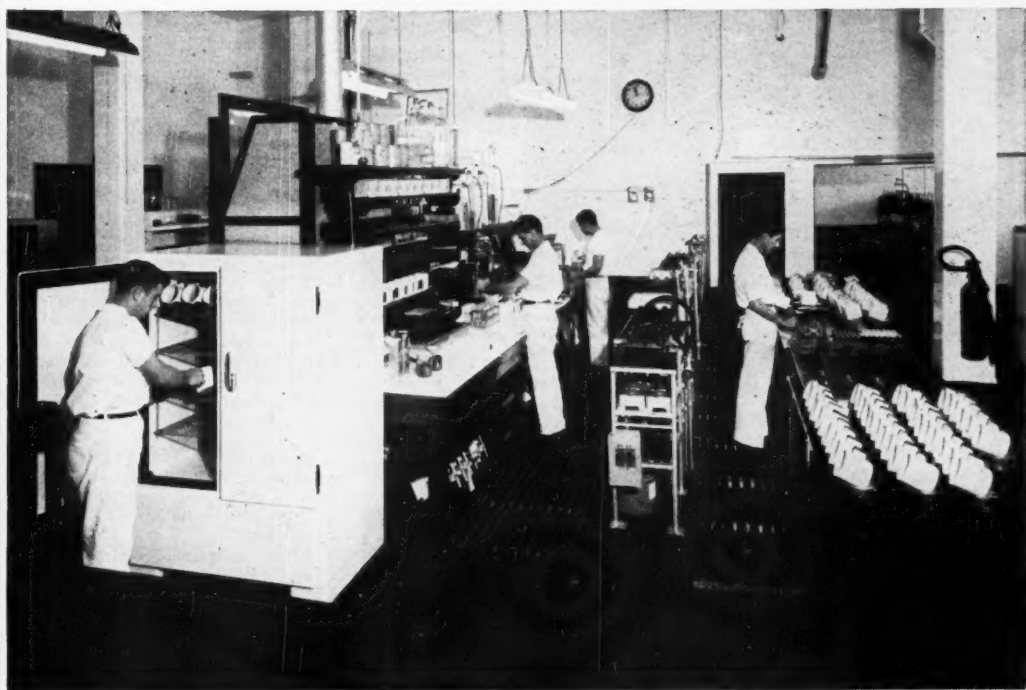
Concerning the use of foreign oils in margarine, Heilman stated that less than one-tenth of 1 percent of all the oils used in margarine came from foreign sources while 99.9 percent was the product of American farms, according to the Bureau of Internal Revenue.

Commenting on charges made by butter interests that permitting the sale of yellow margarine in Ohio would increase the price to the consumer, Heilman said: "Thousands of farmers and city people along the western and southern fringe of Ohio have been buying yellow margarine in Kentucky and Indiana for years. They know that in those adjoining states yellow margarine consistently sells for only 10 to 12 cents above the price of white margarine, the difference being the federal tax and fees."

Earlier, David G. Wing of Mechanicsburg, former Ohio ASA director, incensed over what he termed "an effort of the Ohio Farm Bureau Federation to scuttle soybean production," called on Farm Bureau members to oust all their administrative officers at the first opportunity.

The issue of colored margarine reached the Ohio ballot as a result of initiative petitions signed by more than 400,000 voters. It was the first direct test of the margarine question at the polls.

Serving The Soybean Industry



The Oil Refining Department at Woodson-Tenent Laboratories, Memphis, Tenn., has a capacity of 150 refinings a day. The special refrigerator is for cooling oils.

Official Chemists
National Soybean
Processors Assn.

SOYBEAN OILS - CAKE - MEALS
ALL AGRICULTURAL PRODUCTS

Referee Chemists
American Oil
Chemists Society

WOODSON-TENENT LABORATORIES

MEMPHIS, TENN.

Analytical Chemists

Laboratories: Memphis, Tenn.; Blytheville, Ark.; Little Rock, Ark.; Cairo, Ill.; Des Moines, Iowa.

"OVER 800 MILLION DOLLARS WORTH OF PRODUCTS ANALYZED SINCE 1935"



Ohio housewives expressed their disapproval of the Ohio Farm Bureau Federation's stand against yellow margarine when some of them picketed the Federation building in Columbus Oct. 27. Signs called for a "yes" vote on yellow margarine.

COTTON BELT LOWERS RATE

The St. Louis Southwestern Railway Lines (Cotton Belt) have announced that they will meet the freight rates of the Missouri Pacific and Frisco lines on soybeans to New Orleans. Effective Nov. 3, rate is 19½¢ on soybeans shipped for export from points in southeast Missouri and northeast Arkansas.

The railroad petitioned the Interstate Commerce Commission for permission to make the rate effective immediately so producers in the area would obtain some benefit on the lower rates from the 1949 soybean crop.

The change in rate followed the request of the American Soybean Association and producers in the area. Soybean growers on Cotton Belt points have been receiving from 5 to 7 cents per bushel less than those shipping over competing lines, an unjust discrimination in the belief of Association officials.

The Association also wired the Interstate Commerce Commission asking that the new rate be made effective immediately before the 1949-crop movement was completed.

GROWERS

In Mississippi

The varieties S-100, Ogden, and Roanoke are those best adapted for seed production in the Yazoo-Mississippi Delta, report Edgar E. Hartwig and Robert B. Carr in *Mississippi Farm Research*. These varieties mature and are ready for combining about September 10, October 1, and October 25, respectively.

S-100 seed is generally available for 1949 planting. Although S-100 has given the highest seed yields for

varieties which mature in early September, it usually does not yield as well as Ogden. Other early varieties that will give fairly satisfactory seed yields, but not as good as S-100, are Gibson, Patoka, and Wabash. These varieties were developed for production in southern Indiana.

Wabash is similar to Gibson in maturity and growth type. It has not produced as good seed yields as S-100.

Ogden is the best adapted variety for production in the Delta area. It makes good, erect growth which will shade out weed growth better than any of the earlier varieties. Ogden is a consistent producer of good seed. Seed quality is usually better than that obtained from the earlier varieties. The medium-sized stems and erect growth habit make it a variety well adapted for combine harvesting. Ogden will usually hold its seed very satisfactorily for at least two weeks after it has reached combine maturity.

Two selections from Ogden reported to be superior to it in yielding capacity and seed-holding ability are now on the market. These are Dortchsoy No. 2 and Hale Ogden 12. In comparisons conducted at the Delta Experiment Station, Stoneville, Miss., during the past several years, neither strain has demonstrated any improvement over Ogden for these qualities.

The Arksoy variety and two strains closely related to it, Arksoy 2913 and Ralsoy, which were once quite popular in the Delta, consistently give lower seed yields than are obtained from Ogden.

For those growers interested in producing a soybean which matures in late October, Roanoke has given highest seed yields. Roanoke produces high quality seed, holds its seed extremely well, and has the highest

**Order PRE-TESTED NOD-O-GEN Now
for Your Spring 1950 Requirements**

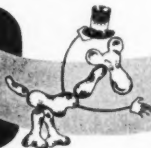
FARM LABORATORY DIVISION

THE ALBERT DICKINSON CO., CHICAGO 90, ILLINOIS, P. O. BOX 788

SOUTHERN OFFICE AND WAREHOUSE: Jackson, Mississippi

Founded 1854

NOD-O-GEN



**The Pre-Tested Inoculator
The Crop and Profit "Pepper Upper"**

oil content of any variety adapted to the Southern states.

Volstate, a variety of similar maturity, is also well adapted. However, Roanoke has produced slightly higher seed yields with a higher oil content.

Don't Burn Stubble

Save your soybean stubble this fall and you'll gain in at least three ways.

Two agronomists in the Illinois College of Agriculture, O. H. Sears and L. B. Miller, urge you not to burn your bean stubble. If you do, you lose organic matter from the decaying stubble, you waste considerable nitrogen that would be added to your soil in the bean leaves and stems, and your fields—especially sloping land—erode more during the winter.

In fact, Sears and Miller say you should not burn any organic material like corn cobs or stalks, grain stubble, and so on.

The soil fertility specialists say that the only place where fall-plowing of bean stubble is justified is on heavy soils that are level.

And they add that practically no insects or disease germs are destroyed by fire that you cannot also control by crop rotation. That's

because when bean stubble is dry enough to burn, no parasites are in it.

Sears and Miller recommend a practice of sowing wheat, oats, rye, or some other cover crop to reduce erosion and save plant food during the winter.

They point out that although oats in central and southern Illinois will not mature after beans, they are a valuable enough aid in soil conservation to seed them with no intent to harvest. Winter oats can be used in southern Illinois.

International Show

Soybeans will again be represented at the International Grain and Hay Show to be held in Chicago Nov. 26 to Dec. 3 in connection with the International Livestock Exposition.

There are classes for 1 peck of yellow or greenish yellow soybeans for all eight regions, and also classes for any other varieties.

Awards will be given to the soybean champion and to the reserve champion. Union Stock Yard and Transit Co. again offers its trophy to the champion. This becomes the permanent property of three-time winners.

Iowa Production

Four Iowa counties produced over 1 million bushels of soybeans in 1943, according to the Assessors' Annual Farm Census for the state.

The counties: Pocahontas 1,051,831; Kosciusko, 1,354,931; Calhoun, 1,323,062; Webster, 1,124,874. All are located in the north and west central part of the state.

Districts with the heaviest soybean production in 1943 were: northwest 6.7 million bushels, north central 7.2 million; and central 7.8 million.

Total Iowa production in 1943 was 34.6 million bushels.

Texas Quest

So far Texans have not been highly successful with soybeans, as most varieties do not even flower in the state. At the Chillicothe substation of the Texas Agricultural Experiment Station fairly late varieties planted late seem to do best.

Mamotan, Mamloxi and Yelnando do the best so far, according to Progressive Farmer. Yields average 800 to 900 pounds of beans to the acre.

"Soybeans don't start making

IT'S **Glidden...**

Pacemaker in Soya Research

**FOR THE BEST
IN INDUSTRIAL SOYA PROTEINS**

ALPHA* PROTEIN • PROSEIN* • SPRAYSOY* • PROSOY* • MULSOYA*

Glidden soya protein materials are used today in the manufacture of a wide variety of products, including paper, wallpaper, insulating board, paint, floor coverings, textiles, rubber, leather, insecticide sprays, fire-fighting foam, adhesives and emulsions.

A complete technical service is available.

*Trademark Registered



The Glidden Company

SOYA PRODUCTS DIVISION

5165 West Moffat Street
Chicago 39, Illinois

floral buds until the days shorten," the Progressive Farmer quotes Supt. Roy Quinby as saying. "If you use fairly late varieties and plant them late, say in June, they will make their growth without putting on beans. Then in September they will begin to fruit and make flowers rapidly from top to bottom. Thus the crop ripens uniformly and can be combine harvested in October without much loss from shattering."

Early and medium varieties have failed on the station. They fruit slowly and ripen unevenly. There

Inspect Acom Soybean Plots



A Midsouth crowd visits the agricultural research division on the O. H. Acom Farms, Wardell, Mo., Sept. 24. Occasion was the grand opening of the new all-steel \$300,000 gin of Citizens Gin Co., which O. H. (Cap) Acom heads at Wardell. About 300 cotton men attended the opening and enjoyed the old-fashioned barbecue. The completely modern gin can handle eight to ten bales of cotton an hour. Cotton and soybeans are the leading crops on the Acom Farms, which comprise over 20,000 acres. Hearstill Banks is in charge of the agricultural research division of the farm.

is much shattering; and the seeds are shriveled and otherwise of such poor quality the mills do not care to buy.

Results with Nitrogen

Dr. R. L. Cook, professor of soil science, reports some one year's results (1948) from Michigan which strike an optimistic note for side dressing soybeans with nitrogen. The following results indicate that side dressing may be a profitable practice under a wide variety of conditions.

Preceding Crops	Bu. of Soybeans per acre	
	Not Side Dressed	Side Dressed
Potatoes	19.8	24.3
Soybeans	21.4	23.4
White Beans	20.5	24.7
Sugar Beets	22.0	26.6
Corn	19.9	23.7
Oats	16.9	21.7
Barley	16.6	22.0
Brome Grass (1)	21.0	24.0
Timothy (1)	21.3	24.9
Clover (1)	19.9	23.4
Clover-timothy (1)	20.0	22.1
Alfalfa (1)	21.1	24.9
Alfalfa brome (1)	19.1	24.1

(1) Seeded without a nurse crop in spring of 1947.

States Dr. Cook, "We have observed for years that soybeans are quite commonly short of nitrogen, especially when they are grown on rather heavy, poorly drained soils. We are planning to continue this work this coming season."

Use of Limestone

A soils specialist in the Illinois College of Agriculture explains two situations in which the ideal time to spread limestone is right away after you've finished harvest work.

C. M. Linsley, extension soils man, says fall is an excellent time to spread limestone on land that

you've plowed for corn or soybeans and which is to be followed by small grain and clover.

This is an ideal place in the rotation, since it allows about a year for the limestone to correct the acidity. The lime is mixed thoroughly with the surface soil by working the seedbed and cultivating the corn or beans.

The second situation in which fall is an ideal time to spread limestone is on soybean stubble where you're planting grain and legumes next spring. But get the lime on this land as soon as possible and disk it in lightly. The longer you delay liming soybean stubble, the less time the lime has to sweeten the soil before planting legumes in your grain next spring.

Minnesota Production

Big soybean producing area of Minnesota is the south central district which grew 6.5 million of the 15.6 million bushels produced in the state in 1948.

There are two million-bushel counties in Minnesota. Blue Earth with 1,500,000 bushels in 1948, and Faribault with 1,403,000 bushels. Both are in the south central district.

The southwest district of Minnesota produced 3 million bushels of soybeans in 1948.

Soybean production figures by counties for 1947 and 1948 showing acres harvested, yield per acre and production in bushels are carried in Minnesota Agricultural Statistics published by State-Federal Crop and Livestock Reporting Service, 531 State Office Bldg., St. Paul 1, Minn.

Fredman
BAG CO
SINCE 1889

BAGS
for
SOYBEANS
AND
PRODUCTS

PRINTED
BAGS
for Individuality

Used
BURLAP
AND
COTTON
BAGS
TWINE

**VACUUM
CLEANED**

WE
BUY
SURPLUS
BAGS

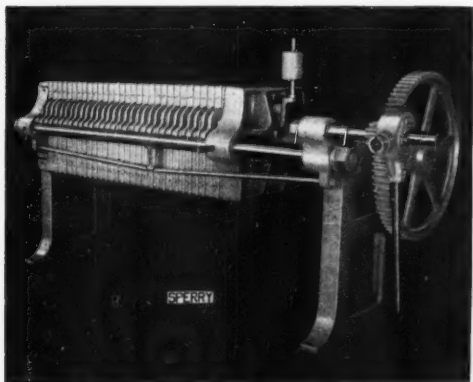
Phone
DALY
8-4114

FREDMAN BAG CO.
330 E. CLYBOURN ST.
MILWAUKEE 2, WIS.



Flexibility...

AN EXTRA VALUE IN THE SPERRY FILTER PRESS



Flexibility, as applied to the Sperry Filter Press, gives you these definite advantages . . . all important factors in the purchase of process equipment:

Efficient operation under many varying conditions.

High, medium or low pressure filtration.

The use of any filter medium.

The handling of any filterable mixture (including viscous), either hot or cold with precise temperature control if required.

Add **ECONOMY** (low first cost, low maintenance), **SIMPLE CONSTRUCTION** (easy to install, easy to operate) and **UNIFORMITY OF PRODUCT** . . . and you have the reasons behind universal acceptance of the Sperry Filter Press. Sperry engineers are always available to help put these advantages to work for you. Call on them today!

D. R. SPERRY & COMPANY

BATAVIA, ILLINOIS • Filtration Engineers for over 50 years

Eastern Sales Representative: H. E. Jacoby, M. E. • 205 E. 42nd St., New York 17, N. Y. • phone: MUrray Hill 4-3581

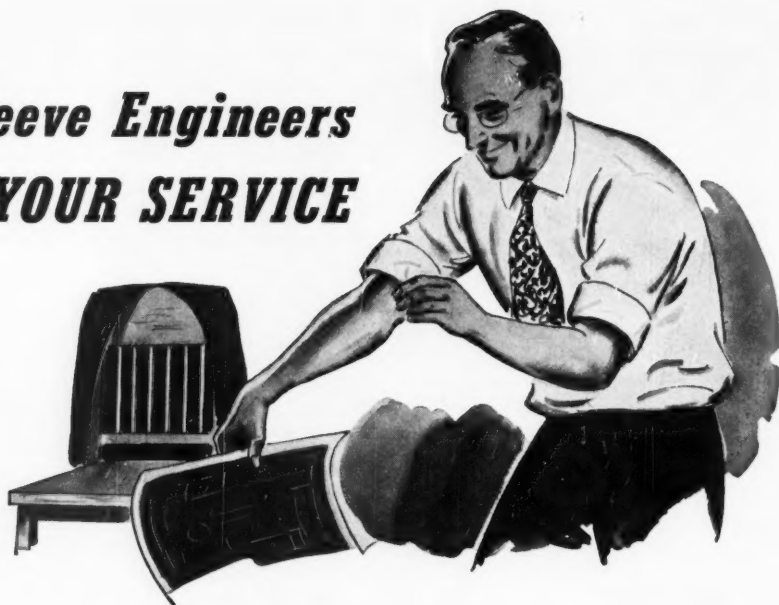
Western Sales Representative: B. M. Pilhashy • 833 Merchants Exchange Bldg., San Francisco 4, Cal. • phone: DO 0375



SPERRY

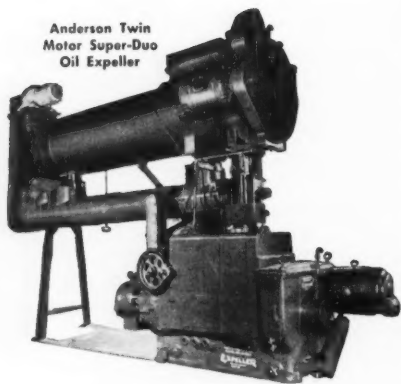
FILTER PRESSES

Shirt-Sleeve Engineers at YOUR SERVICE



EXPELLER* ENGINEERS are shirt-sleeve engineers . . . they'll go a long way to be of service to a soybean oil miller. If you are having trouble with your pressing equipment, these friendly men with years of practical experience will take off their coats, roll up their sleeves, and go to work on your problem, if necessary. If you are contemplating a new plant, they'll spend hours with you, if necessary . . . *even to the point of providing complete mill plans* . . . so that your operation will be profitable! If you are considering replacement of obsolete equipment or additions to your present facilities, they'll give you advice based on their long experience with soybean extraction problems. Many soybean processors find this form of shirt-sleeved service of extreme value . . . use it whenever they encounter a difficult problem. If you have a soybean extraction problem, write and let us have a friendly Expeller Engineer go to work on it. There's no obligation.

Anderson Twin
Motor Super-Duo
Oil Expeller



THE V. D. ANDERSON COMPANY
1976 West 96th Street • Cleveland 2, Ohio

*Exclusive Trade Mark registered in U. S. Patent Office and in Foreign Countries.

ANDERSON

**EXPELLERS AND
SOLVENT EXTRACTION
EQUIPMENT**

GERMAN SOYBEAN POSSIBILITIES

(Released from Frankfurt, Germany)

The first team of agricultural experts sent to West Germany under the program of technical assistance provided in the Marshall Plan completed its work and returned to the United States early in November according to an announcement made by the German Foods Ministry.

Composed of Jackson L. Cartter, director of the Regional Soybean Laboratory of the U. S. Department of Agriculture at Urbana, Ill., and Geo. M. Strayer, Hudson, Iowa, secretary of the American Soybean Association and editor of the Soybean Digest, this technical assistance team was financed by Marshall Plan funds, went to Germany at the request of Foods Ministry officials to make a survey of soybean production and utilization possibilities in West Germany. They spent 5 weeks traveling over Germany, Holland and south Sweden studying the soybean breeding and testing work being done on European and American

varieties, as it would apply to German conditions, together with the processing of the crop and its incorporation into food products.

Recommendations of the team of experts in their report to German governmental officials included:

a strong recommendation for continuation and expansion of soybean breeding work in an endeavor to produce varieties combining sufficiently early maturity with high yields;

a suggestion that in today's West German national economy commercial production of soybeans can not be economical in view of present relatively low soybean yields as compared with high yields of carbohydrate crops; and

a strong recommendation that in a German food economy which falls far short of correct protein levels for growth and maintenance of the human body soybean protein should be incorporated in small amounts in staple items of the average diet.

"Contrary to current opinion in Germany," commented Strayer, "soybean protein is not an ersatz product. In reality it is the most nearly balanced and complete of all vegetable proteins available in commercial quantities today. The quality of the protein compares very favorably with that of the best meats, and can be supplied at only a fraction of the cost. Proof of its nutritional qualities and commercial adaptations lies in its use in a high proportion of the candy, confectionery, bakery and ground meat products made in the United States today.

"Properly prepared soy flour contains about 50 percent pure protein," Strayer continued, "and when

used in small quantities to enrich meat and bakery goods, two of the staples of the German diet, will naturally increase food values. Five percent soy flour added to wheat flour will increase by 50 percent the protein content of the loaf, as well as supplying a much more complete balance of the essential amino acids.

"Germany," Strayer continued, "has been a leader in soybean processing since the 1920's, having developed the first solvent processing plants for oilseeds. The German foods industry has developed a number of very desirable food products, utilizing the value of soy protein in acceptable food products. Importations of raw soybeans are again possible, thus enabling Germany to produce the style and types of protein-fortified foods most desirable.

In discussing the possibilities of soybean production on a commercial basis in West Germany Cartter, who is in charge of the soybean breeding laboratory which has developed the varieties comprising 95 percent of the 13 million acres of soybeans now grown each year in the U. S., pointed out that European plant breeders have made a distinct advance through the production of soybean varieties sufficiently early for the German climate. American soybean varieties do not lend themselves to commercial production here because of the difference in climatic conditions, however, they should be included in the breeding program.

"It should be possible to combine this early maturity with high yield through a comprehensive breeding program," Cartter pointed out. "At some time in the future, should such varieties become available, soybeans might become an important source of domestic protein in the German

(Continued on page 16)

J. L. CARTTER



327 So. La Salle St., Chicago 4, Ill.

Phone: Harrison 7-5244

PHONE, WIRE, OR WRITE

ROESLING, MONROE & CO. BROKERS

CRUDE AND REFINED VEGETABLE OILS

CARL H. SMITH

GEO. K. DAHLIN

HUGH B. ELLSWORTH

Our close contacts and long successful experience in servicing the trade can be of benefit to your organization. Please try us.

ANIMAL PROTEIN FACTOR

Here's What You Can Believe and What Not to Believe about the Much-Talked-of APF

By JAMES C. FRITZ

Member, Soybean Research Council

WHEN SOMETHING new is developed there is always a tendency to overlook what has been used before to accomplish the same ends that the new discovery or invention can achieve. This is true at present in connection with the "Animal Protein Factor"—or vitamin B₁₂. The two may not be—and probably are not—synonymous. Let us look for a moment at the history of this newest nutritional factor.

It has long been recognized that animal protein concentrates are often more valuable in the diet than are vegetable protein concentrates. Not all of the difference could be explained on the basis of the amino acids which such products contain. Mineral elements carried along with the animal protein concentrates could be replaced by other sources, but these minerals did not explain fully the peculiar advantages of certain animal protein concentrates. From such observations there was developed the term "Animal Protein Factor" to explain the unknown element which contributed so much to the nutritional value of such ingredients as fish meal, dried skim milk, etc. Unfortunately for the accuracy of the term, similar activity was also found in materials not of animal origin.

"Factor X"

Among the earliest attempts to identify this unknown factor we can note the work of Cary and Hartman of the USDA. They found their "Factor X" to be essential for normal growth and reproduction in the laboratory rat. It was apparently concerned with protein metabolism. Furthermore, they demonstrated that the factor could be removed from such products as casein by extraction with alcohol.

An extensive test program was carried on by the Poultry Nutri-

tion group at Beltsville, and their findings were reported in a series of scientific papers by Titus, Bird, Hammond, Nestler, Rubin, Groschke, and others. The finding that cow manure was a rich source of the unidentified factor was one of the outstanding results of this poultry investigation. It was clearly demonstrated that growth and hatchability could be increased by adding such materials as cow manure, fish meal, or liver meal to all vegetable diets.

Added impetus was given to this work by the shortage of animal protein concentrates during the war. It was urgently necessary that a source of the unidentified factor be added to rations which relied largely on soybean oil meal for their protein content. It was during this period that large-scale use of fish solubles was started. Work by Carrick and his associates at Purdue, by Halpin and Cravens at the University of Wisconsin, and numerous others, clearly demonstrated the effectiveness of condensed fish solubles when added to vegetable protein diets.

While this poultry work was in progress, other workers were searching for the anti-pernicious anemia factor. At least as early as 1926 it was known that pernicious anemia could be successfully treated by feeding the patient large quantities of liver. Certain animal disorders were noted to be markedly similar to human pernicious anemia. Morris and his co-workers demonstrated that an anemia which developed in dogs during reproduction on certain dry rations could be prevented or cured by liver or liver concentrates which were high in APA activity.

The Wisconsin workers were perhaps the first to demonstrate a marked similarity in distribution of the unidentified chick growth factor and the human anti-pernicious anemia factor.

Early in 1943 the isolation and identification of vitamin B₁₂ was an-

nounced by Ricks and co-workers of Merck and by the Glaxo Laboratories in England. Early assays for the new factor were developed by Shorb, using *Lactobacillus lactis*. Later a number of other microbiological assays were developed. These findings enabled workers to evaluate natural sources in terms of vitamin B₁₂. Here we have a new factor shedding its "Unidentified" cloak and taking its place among the known members of the water-soluble vitamin B complex.

Highly Potent

Vitamin B₁₂ was unusual in that the crystalline material contained cobalt and phosphorus. The full significance of these elements is not yet fully understood. Another point of interest was the extremely high potency of the purified vitamin B₁₂. One microgram was found to equal the anti-pernicious anemia activity of one APA unit of liver preparation. Additions of 10 or 12 micrograms per pound of ration were shown to give approximately optimum growth response in chicks and farm animals.

These results emphasized what those familiar with the work already knew—that the "Animal Protein Factor" was not a protein at all but that it was a water-soluble vitamin. This in itself indicates, at least in part, where the new factor will fit into the nutrition picture. It is obvious that it cannot serve as protein, cannot furnish amino acids, and can in no direct way influence the animals' or birds' need for protein. The familiar protein concentrates must still be used in the same quantities regardless of whether or not a concentrated source of the "Animal Protein Factor" is supplied. The identification of the new factor does not make obsolete good rations that were used prior to the identification of vitamin B₁₂. It should be obvious that the use of a crystalline vitamin, or high po-

tency concentrates, will not produce results which could not be obtained with natural sources of the vitamin.

Is Passed on

Early in the work on the "Animal Protein Factor" it was recognized that the diet of the parent stock had a large influence on the chick's requirements for a dietary source of the factor. In other words, it was transmitted through the egg. Workers went to considerable trouble to secure experimental chicks and animals which would have a sufficiently low storage of the factor so that a marked response could be demonstrated when the young were given a dietary source of the factor. This point has not been explained in some of the popular advertising given the new factor. Laboratories which are now using chicks for assay of "Animal Protein Factor" activity place the breeder flock on an all-vegetable ration and also keep the hens on wire so that they cannot eat their own droppings. It has been demonstrated that bacterial action in the droppings can produce this factor as well as other members of the vitamin B complex. Obviously, some poultrymen are going to be disappointed if they expect to see in their own flocks some of the outstanding differences currently ascribed to addition of vitamin B₁₂ to chick rations.

Whether or not vitamin B₁₂ represents all of the activity generally attributed to "Animal Protein Factor" is a debatable point. Cary and Hartman with their laboratory rats and Catron with his pigs apparently are getting as much activity from concentrated sources of vitamin B₁₂ as they do from natural ingredients such as fish meal and fish solubles. Our results are in agreement. In a recent test with albino rats we used essentially the Cary-Hartman procedure except that we used an isolated soybean protein instead of alcohol extracted casein in the assay diet. The data are summarized in the following table.

Supplemental to basal diet	Average wt. gain in 4 weeks (gms.)	Grams feed per gram gain in wt.
None	18.00	7.89
2% cond. fish solubles	67.33	3.46
0.15% vitamin B ₁₂ concentrate	101.67	3.09

After the rat test was completed it was found that the vitamin B₁₂ concentrate supplied considerably more vitamin B₁₂ at the level used than did the 2 percent of condensed fish solubles. The difference can be

explained on the basis of the quantities of vitamin B₁₂ actually fed.

In the case of chicks, most workers are less sure that vitamin B₁₂ represents all of the "Animal Protein Factor." A recent chick test illustrates the type of data which suggest that other unknown factors are involved:

The chicks used were New Hampshires, hatched from the experimental farm flock which has been on a normal rather than a deficient ration. The chicks were distributed into wire-floored batteries and given the following diet, with and without supplements:

Ground yellow corn	56.0
Dried brewers yeast	5.0
Whey solubles dried on soybean meal	3.0
Riboflavin concentrate	0.1
Choline chloride	0.15
Niacin	0.001
Isolated soybean protein	20.0
Standard middlings	10.0
A and D feeding oil	0.5
Defluorinated phosphate	2.0
Calcium carbonate	2.0
Iodized salt	1.0
Manganese sulfate	0.02

The following results were obtained:

Supplemental to basal diet	Average wt. of chicks at 3 wks. (gms.)	Grams feed per gram gain in wt.
None	126	3.39
5 micrograms vitamin B ₁₂ per lb.	131	3.21
10 micrograms vitamin B ₁₂ per lb.	146	3.12
2% cond. menhaden solubles	162	3.08
4% menhaden meal	154	2.35

Microbiological assays for vitamin B₁₂ indicated that the menhaden solubles contained 0.68 micrograms

per gram and that the menhaden meal contained 0.21 micrograms per gram. Therefore, the chicks which received the fish solubles received only about 6.2 micrograms of added vitamin B₁₂ per pound, and the chicks which received the fish meal received only about 3.8 micrograms of added vitamin B₁₂ per pound. It is obvious, however, that these two groups of chicks grew better than did the chicks which received only the vitamin B₁₂. The only explanation seems to be that the fish meal and the fish solubles contributed something more than vitamin B₁₂.

Ershoff has recently reported results which indicate that there is present in liver or crude liver extracts some factor other than vitamin B₁₂ which enables the laboratory rat to overcome the toxic effects of feeding desiccated thyroid. This observation is of interest because it has been common practice to feed thyroid or iodinated casein to increase the experimental animals' need for vitamin B₁₂.

Another relationship of interest is the observation of Schaefer and of Gillis and Norris that vitamin B₁₂ has a sparing action on the requirement for choline or other sources of labile methyl groups. It appears also, from the reports of Schaefer and his co-workers, that choline can exert a sparing action on vitamin B₁₂. Further work will be needed

When enough APF is available it will be given an important place in balancing feeds for farm animals.



to clarify the practical importance of these observations.

An excess of vitamin B¹² will probably be of no more benefit than would an excess of riboflavin or of any other vitamin. In other words, enough is sufficient and more does no good. This point is illustrated in a chick test recently completed. The chicks were New Hampshires kept in screen-floored batteries under the usual laboratory conditions. The basal diet had the following composition:

Gr. yellow corn	48
Standard middlings	10
Alfalfa meal	2
D-activated animal sterol	0.03
Manganese sulfate	0.025
Soybean oil meal	30
Corn gluten meal	5
Steamed bone meal	2
Calcium carbonate	2
Iodized salt	1

The results are summarized in the following table:

Supplemental to basal diet	Average wt. of chicks at 8 wks.	Grams feed per gram gain in wt.
None	455 grams	3.59
3% Fish solubles and betaine dried on soybean meal	731	2.78
3% Same plus 3 micrograms B ₁₂ per lb.	748	3.16
4% Fish meal plus 1 mcgm. riboflavin per lb.	721	3.12

Other tests with chicks and with turkey poults support this indication that little or nothing is to be gained by adding a concentrated source of vitamin B¹² to a diet already adequate with regard to this factor. A recent turkey growth test might be noted:

The poults were hatched from the experimental farm flock which had received in its diet natural sources of the "Animal Protein Factor." The poults, therefore, were normal rather than depleted birds. They were raised in screen-floored batteries.

The basal diet had the following composition:

Gr. yellow corn	39
Standard middlings	10
Whey solubles and betaine dried on soybean meal	4
D-activated animal sterol	1
Dry vitamin A supplement	1
Soybean oil meal	35
Alfalfa meal	5
Steamed bone meal	2
Calcium carbonate	2
Iodized salt	1
Manganese sulfate	0.025

The growth record of the bronze poults is summarized below:

Supplement to basal diet	Average wt. of poults at 7 wks. (gms.)	Grams feed per gram gain in wt.
None	1038	2.77
2% cond. fish solubles	1012	2.91
4.5 micrograms vitamin B ₁₂ per lb. from conc. A	1075	2.78
4.5 micrograms vitamin B ₁₂ per lb. from conc. B	1033	2.90

These observations, supported by repeated tests, suggest that the turkey poults may not have a very

large requirement for the "Animal Protein Factor." It should be kept in mind that for many factors in the water-soluble group poults do not require greater quantities than do chicks. It seems likely that this will also apply to their requirements for vitamin B¹². This, of course, applies to normal poults and not necessarily to poults which may be hatched from depleted breeder stock.

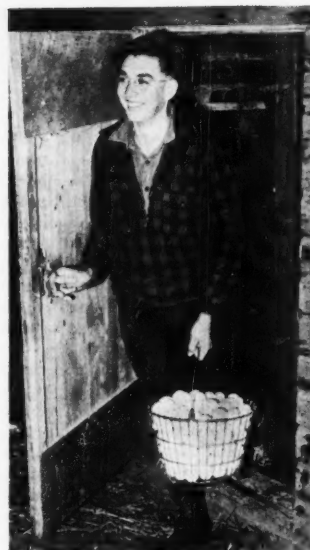
Sources of the "Animal Protein Factor" will be of major interest to feed manufacturers. Most of the concentrates for feed manufacture will be derived from fermentation processes. Several such products are now available and others will, no doubt, soon appear on the market. These concentrates will help to standardize the vitamin B¹² content of other ingredients and will augment the now scarce natural sources.

Sources of APF

Animal protein concentrates vary widely in their content of this factor. It is not clear at present how much of this variation may be due to processing losses caused by heat and other factors. It seems apparent, however, that the more severely processed materials are the least dependable sources. Unextracted liver meal and fish solubles are perhaps the best of the natural sources. Fish meal and dried skim milk are good sources, but greater than usual levels of these ingredients must be used if they are to furnish the principal source of "Animal Protein Factor" for the ration. Meat scraps and tankage are quite variable and cannot usually be depended upon without assay of the particular lot or lots in question. Most investigators believe that fresh or drier green—such as alfalfa—are fair sources of this factor. However, it should be noted that Zucker and Zucker failed to find any activity in plant sources in their tests with rats. Yeast is almost completely devoid of "Animal Protein Factor," and it is, in fact, used to furnish other members of the B complex in rations for assay of the "Animal Protein Factor." When enough of this factor is available, it is likely that it will be given an important place in balancing feeds for farm animals and poultry. It may well rank with the riboflavin in importance.

In summary, we might note:

1. The "Animal Protein Factor"



Animal protein factor concentrates will be useful in balancing other natural sources, not in replacing them.

is not new—only the recent emphasis and the high potency concentrates are new.

2. It is a vitamin of the water-soluble B complex, and cannot serve as a protein or replace protein in the ration.

3. Vitamin B¹² is an important part of the "Animal Protein Factor" but probably not the entire factor of value to poultry.

4. Vitamin B¹² concentrates may be used to standardize or augment natural sources, but they should not be expected to produce results superior to those which can be obtained with natural ingredients which contain the "Animal Protein Factor."

— s b d —

GERMANY

(Continued from page 13)

agricultural economy. However, we are convinced that at the present stage of development, and in view of the need for high tonnages of carbohydrate foods for human consumption, soybeans can be produced more economically for the time being in other parts of the world than in Germany. For the time being it is only good logic to produce potatoes, wheat, rye and root crops here, supplementing them with proteins from outside sources.

SOYBEAN DIGEST

A NEW SOYBEAN PRODUCT . . .

Gelsoy

By A. C. BECKEL,¹
P. A. BELTER and
A. K. SMITH

Northern Regional Research Laboratory²
Peoria, Ill.

A NEW SOYBEAN proteinaceous product has been developed at the Northern Regional Research Laboratory and given the name Gelsoy. The bland taste of Gelsoy and its whipping and gelling properties should earn for it wide application in the food industry. Its adhesive characteristics promise several special industrial applications.

Gelsoy is a water-soluble product. It is derived either from soybeans which have been solvent-extracted with ethanol or from special soybean flakes which have been washed with ethanol. The latter is the more practical procedure at present. This general description of the materials used for making Gelsoy, the outline of the method for its production, and the discussion concerning its known properties and potential commercial uses cover only the laboratory stage of its development.

Materials for Production

Gelsoy is a direct result of earlier work at the Northern Regional Research Laboratory on the oil-solvent-extraction of soybeans with ethanol (1,2,3). However, it was later discovered that hexane-extracted soybean flakes could be used as the base material for its preparation. When hexane flakes are used they must be of an undenatured type, that is, produced with a minimum amount of heat or steam treatment so as to contain a high percentage of water-soluble protein.

Although rigid specifications have not been established for the best type of flakes for Gelsoy production, an approximate value for nitrogen solubility can be placed at 68 percent or above. The solubility test, which is presently applied, uses a water-to-flake ratio of 40:1 and 30 minutes of shaking. The test is more

completely described by Smith and Circle (4).

A low yield of Gelsoy, as well as an inferior product, is obtained from flakes produced by the usual solvent-extraction process with its accompaniment of steam treatment for maximum nutritional value. The work thus far indicates that a soybean processing method without further heat treatment which removes the solvent from the flakes by use of superheated solvent vapors gives the best product for making Gelsoy. Heating the flakes in the presence of moisture rapidly denatures the protein, but temperatures up to 85° C. may be tolerated for a short period.

Ethanol-extracted soybeans give as good, or better, product than the alcohol washed hexane flakes for Gelsoy production providing the temperature during extraction does not go above the boiling point of the alcohol. However, since there is no commercial source of ethanol-extracted flakes in this country, their use will not be discussed.

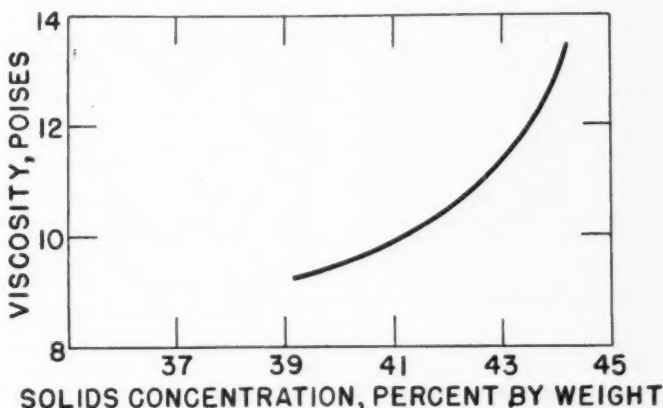
Outline of Process

Engineering details for the pro-

duction of Gelsoy are not yet available for publication, but a general outline of the process may be presented. Special undenatured flakes are washed with ethanol, either by batch operation or by a laboratory countercurrent extraction apparatus (5). While a satisfactory product may be produced by alcohol washing at room temperature, a more bland product is obtained if the washing is at 40° to 50° C. In the countercurrent type of operation, an extraction period of 20 minutes is sufficient at a solvent-to-flake ratio of about 2:1. In the batch operation a double or triple extraction may be used.

The alcohol washing removes less than 1 percent of the flakes in the form of a brownish-colored waxy material. The alcohol soon becomes saturated, but because of a high temperature coefficient of solubility the concentration of solubles can be substantially reduced by cooling and settling at 12° C. or lower. The solvent or miscella may then be used again satisfactorily by adding the alcohol obtained on desolventizing the flakes. The removal of excess solids by cooling makes the distillation of the alcohol unnecessary and costs of operation are lower. The alcohol washing, removal of solubles by cooling, and reuse of the alcohol is similar to the nondistillation alcohol extraction process for soybean oil previously published (2). In usual laboratory practice the alcohol is removed from the flakes by evaporation at room temperature and an equivalent amount of new alcohol is added to the miscella as the make-up.

After the extracted flakes have



Viscosity versus solids concentration Gardner-Holdt viscosimeter tubes at 25°

¹ Deceased.

² One of the laboratories of the Bureau of Agricultural and Industrial Chemistry, Agricultural Research Administration, U. S. Department of Agriculture.

been washed with alcohol, they are extracted with water and the soluble portion recovered by spray-drying. The yellowish powder resulting is Gelsoy. A single water extraction of the flakes gives a solution containing about 8 percent solids, which is too dilute for economical spray-drying. A higher concentration of solids is obtained by using the first extract to extract a second and third batch of flakes. By this method of counter-current batch operation a solids concentration as high as 25 percent has been made in laboratory operation. An 80-mesh wire screen has been used to separate the insoluble residues from the solution, and thus a small amount of insoluble fine material passes into the solution. For some uses these fines may not be objectionable. If their removal is desired, an appropriate type of centrifuge may be used.

In using a pilot-plant spray drier with a feed rate of 0.6 gallons per hour, an air inlet temperature of 360° C., and an outlet temperature of 113°, a product was obtained which had a water content of 3.7 percent, with 96.3 percent of the total nitrogen being water-soluble. When a feed rate of 1.5 gallons per hour was used with a 360° inlet temperature and a 95° outlet temperature, the finished product contained 6.2 percent water and the nitrogen solubility dropped to 91.0 percent.

If a spray drier is not available for recovery of the solids, the evaporation of the water may be carried out in shallow pans at low temperature. A yield of Gelsoy of 50 to 60 percent based on the original weight of the meal is anticipated in large scale production; however, higher yields have been obtained in the laboratory processing.

A complete chemical analysis of Gelsoy is not yet available, and its composition will vary somewhat with the method of production. The analytical results thus far obtained show it to contain about 55 to 60 percent protein (N x 6.25), less than 1 percent reducing sugars, 15 to 20 percent acid hydrolyzable sugars which perhaps is mostly sucrose, 9 percent ash, and 3 percent moisture.

Properties of Gelsoy

Gelsoy is a pale yellow powder which is quite soluble in water; solutions of 50 percent concentration can be prepared at room temperature. The graph shows preliminary determinations of viscosity change

● *The Northern Regional Research Laboratory has developed another product from soybeans. It has properties like egg white and it should find wide uses both in food and as an adhesive.*

with increase in solids concentration. These data show that there is no marked increase in viscosity until the concentration rises above 40 percent.

One of the properties of Gelsoy, which distinguishes it from other vegetable proteinaceous solutions, is that a water solution of 10 percent concentration will form an irreversible gel when heated for a few minutes at 90° C. This gel, as now prepared, is not as strong and clear as that produced by gelatin but nevertheless it is self-supporting; this property may well be an important factor in developing practical applications for this product. When some of the waxy material obtained from the cooled and settled alcohol was added to the Gelsoy, the gelling property was destroyed, thus indicating that alcohol washing is an important step in developing the gelling property.

The irreversibility of the gel indicates that its formation is due to denaturation of the protein. The whipping characteristics of water solutions and rapid insolubilizing of the protein with moderate heat treatment are properties corresponding to those of egg white solutions, although the insolubilizing temperature is somewhat above that for egg white.

Application

Gelsoy is not as yet in commercial production but in anticipation of this possibility its potential uses have been surveyed on a laboratory scale. When Gelsoy is whipped into a foam, the volume produced is equivalent to or greater than that of egg white, when measured on a nitrogen equivalent basis, and the foam has excellent stability.

This foaming property suggests its use as a whipping agent or a meringue and for confections and other food products where egg whites are used. Directions for making a similar meringue are as follows: Forty-five grams of Gelsoy are dissolved in 350 milliliters of water and allowed to soak for a few minutes. This solution is heated in a double boiler for about 15 min-

utes or until its temperature reaches 90° C. Overheating or scorching should be avoided. The warm solution is whipped in a kitchen aid mechanical mixer for 4 to 5 minutes, a hot sirup solution is then added, and whipping continued for an additional 4 minutes. The sirup solution may be prepared by heating a mixture of 100 grams sugar, 25 grams corn sirup, 3 grams salt, and 25 milliliters water until it strings. Vanilla or other flavoring should be added. This whip is very stable and can be used in its original state as a meringue on pie, or it may be browned in the oven at about 120° C. The above basic formula may be carried within wide limits.

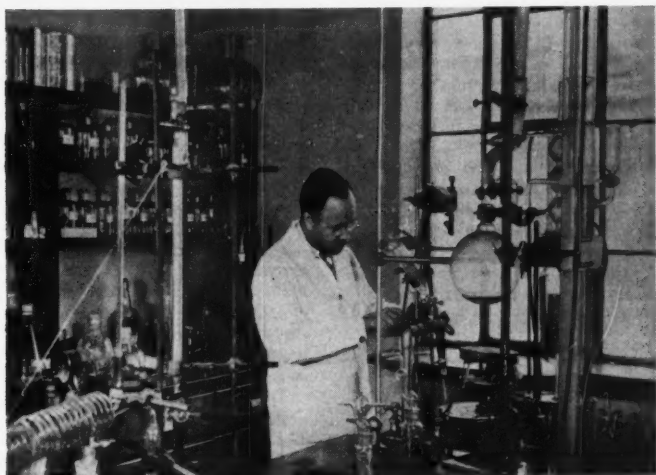
The whip can be made also from the water extract of the alcohol-washed flakes providing the solids concentration in the solution is high enough. To make the proper solution add 650 milliliters of water to 100 grams of alcohol-washed flakes and allow to soak for 30 minutes or longer. Drain off the extract by placing the wet flakes in a cheesecloth and squeezing out the solution with considerable force. About 450 milliliters of protein solution should be obtained. This solution may be treated as the Gelsoy solution described for making whip.

The whipping and gelling properties of Gelsoy suggest also its use in ice cream formulas as a stabilizer, in icing, in specialty bakery goods, and possibly in making marshmallows. Its use as a meat binder is also worthy of investigation, and its bland flavor makes possible its use in soups. In foreign countries where milk is scarce it could be used as a milk extender or formulated into a vegetable milk product by adding fat and vitamins.

Gelsoy is a good adhesive, as it adheres to a wide variety of materials including tin and glass. In certain adhesive applications its property of insolubilizing with heat may be an advantage. Preliminary tests have been made on its use for sealing the cork liner in crown bottle caps. In this application a solution of 48 percent solids content was used and the seal was effected by elevating the temperature on a hot plate to about 95° C. to set the glue. Highly satisfactory results have been reported on test runs by commercial operators. The use in crown seals may be its first industrial application as it will be com-

(Continued on page 40)

SOY COMPOUNDS MAY TREAT ARTHRITIS



Glidden Co.'s Dr. Percy L. Julian. His staff synthesized the new soybean hormone compounds.

Two tremendously important new developments in the synthesis of hormone compounds for possible treatment of rheumatoid arthritis were announced by the Glidden Co., Cleveland, Ohio.

These new developments are:

Synthesis from the soybean of several new hormone compounds closely related to the already proven Cortisone (Kendall's Compound E), and

A new and less costly method of synthesizing the still rare and immensely expensive Cortisone.

Both are the work of Glidden's soya products division's research staff under the direction of Dr. Percy L. Julian.

Of the new compounds created from the soybean, the most immediately promising is one called Compound S, which has never before existed in quantities sufficient for adequate testing. Although the value of Compound S in treating rheumatoid arthritis is as yet unknown, many scientists believe it will have an effect similar to that of Cortisone.

If it does prove beneficial in treatment of this agonizing and crippling disease, the fact that it comes from soybean derivatives—a raw material which is plentiful in the U. S.—means that Compound S will be easier to make than Cortisone, more plentiful and ultimately less expensive.

Dr. Julian's new method of syn-

thesizing Cortisone is less costly than present methods because it eliminates the need for using one rare and expensive chemical heretofore essential in this enormously complicated operation. In addition, the new method makes possible the synthesis of still other new and promising compounds.

Big Impact

Glidden's announcement of these new developments pointed out that the work of Dr. Julian and his staff will have a tremendous impact on this field of medical research.

Last June it was announced that a substance called Cortisone had brought quick relief to rheumatoid arthritides. Tests indicate that this form of arthritis and related diseases are caused by a hormone deficiency. Cortisone supplies a hormone directly and it is believed that Compound S and the other newly synthesized compounds of the same type may likewise supply an effective hormone.

Thus, if they are effective in treating this disease, the fact that they are synthesized from a material as plentiful as the soybean makes their availability infinitely important.

The announcement of these important developments pointed out that the Glidden Co. does not manufacture medicinal preparations. For some years the company's soya products division has produced as bulk chemicals the sex hormones

Progesterone and Testosterone, synthesized from the soybean by Dr. Julian. This invaluable experience with the soybean steroid hormones enabled the division's research staff to advance quickly in its work with the new cortical hormone compounds, which are related.

Still Experimental

Glidden has completed arrangements to distribute the entire available supply of the new compounds to pharmaceutical manufacturers and clinicians, including the U. S. Public Health Institute, so that their possibilities may be determined.

Glidden also stressed that the new substances at present are chiefly of scientific interest, since the effectiveness even of Compound S is completely unknown. The announcement is significant because, for the first time, these anxiously sought for compounds are available in quantities sufficient for clinical research and testing and because they have been prepared from the soybean.

The new substances synthesized along with Compound S by the soya products staff bear such names as 17 alpha Hydroxy Progesterone. Another is known as Pregnenetriolone.

The already partially tested Cortisone is derived from animal sources. It is not only extremely rare—14,600 cattle would be needed to make enough to relieve one arthritis patient for one year—it also is costly and extremely difficult to produce.

Thus, if the compounds now synthesized by Glidden prove effective, individually or with others, they will add immeasurably to the new fund of hope for arthritis sufferers.

— s b d —

IS PRODUCING APF

Tonnage production of the widely-heralded "Animal Protein Factor" as a primary fermentation product has been announced by U.S. Industrial Chemicals, Inc., New York, N. Y., providing a new source of the feed supplement which is recognized as a dietary necessity for insuring rapid growth of farm animals and poultry.

Company officials said the development, accomplished by bacterial fermentation, promises feed efficiency that will represent a significant advance in animal nutrition. In the past, this vital factor has been produced in limited quantities as a by-product from antibiotic operations produced by mold.

INCENTIVES for RESEARCH by the American Soybean Association

By PAUL D. BOONE
Washington, D. C.

IT was Dr. Karl T. Compton, until recently president of the Massachusetts Institute of Technology, who wrote: "Income appropriated to research is not spent, it is invested. . . . If your company does not have a research program prepare to launch one." That last advice has been accepted to their financial well-being for well on to 25 years by such branches of the chemical industry as the petroleum, fine organic chemicals, drug, plastic and rubber industries, to mention but a partial list.

Corporation Research

The trend of corporation financed research in chemistry, which started when that industry in the United States gained a solid foot-hold as a result of World War I, became more pronounced during the 20's and 30's. But it took World War II and the years since then to accelerate the provision of research buildings with facilities and annual appropriations to pay the staff of the scientists engaged. The United States government during the war initiated an enormous amount of research, the impetus of which is still continuing.

In 1920 there were but 297 companies which maintained industrial research laboratories. In 1940 this number had risen to 2,264 laboratories, and by the end of 1946 to 2,443.² Such figures do not even include universities and colleges offering chemical or engineering research service to industry. These industrial research organizations were staffed by scientific and technical personnel totaling 83,834, about 42,000 of which were classified as chemists and engineers. Since it takes several years to send out questionnaires, collect the answers and arrange the information for book form, figures more recent than the above are not available for our entire country. Judging by such indices as membership in our technical societies and subscribers to their official publications, the number of scientists in industrial research laboratories is even greater in 1949. It is interesting indeed that one survey has shown that research workers will make up to 10 percent of the petroleum industry's personnel in 1950, if the present trend continues.³

Whereas computations from different sources of compilation may vary, they have value from a comparative standpoint when submitted by one entity. The base will thus

be the same in arriving at the statistics. A business daily a few years ago quoted Robert I. Lund, chairman of the National Association of Manufacturers, to the effect that 1.1 percent of the gross sales of \$10,230,462,000 of the companies reporting was devoted to research departments. This ratio ranged from only 0.2 percent of the gross sales of the food and leather industry to 3.0 percent of the gross sales receipts of the machinery manufacturers. Companies in the chemical industry with gross sales of \$1,285,202,000 spent 2.4 percent, while those in the rubber industry, with gross sales of \$193,302,000, spent 1.0 percent for research. Appropriations for research have been increased, indicating that such a policy paid.

Today the more enlightened parts of the world are research-conscious. The creation of radio, television, synthetic rubber, and synthetic drugs industries constantly touches the mode of life of citizens in hamlets as well as the largest cities.

Lone Worker Gone

The lone individual with little financial capital, working in the shop or laboratory in the basement or garage of his home, is no longer a prime moving factor in our industrial development. The tempo of research has quickened. For continued growth and success of industries, the ingenuity and originality of the individual is just as necessary today as ever. But the pattern of industrial research is different. Resourceful chemists, engineers and physicists make their individual contributions but are employed by industrial organizations, research foundations, or institutes, trade associations or educational institutions.

It has been found that either the successful or reasonably prompt solution of research problems can be best attained by having the use of well-equipped laboratories and sometimes pilot plants, complete libraries on the subject and related subjects under study, as well as fellow workers who can offer exchange of ideas or new approaches.

Trade associations conduct industrial and pure research, including under the projects, development of new and better products, new processes, process control, and testing. As far back as 1937 the National Research Council made a survey which showed 125 trade associations in the United States engaging in various types of research activity.

At least 30 associations now maintain or operate their own industrial research and/or testing facilities.

This figure does not even take into account the many laboratories maintained by farm grower and processing groups, such as the California Prune and Apricot Growers Association, the California Walnut Growers Association, and others. Nor does it include such laboratories as those maintained by the California Fruit Growers Exchange, which will be discussed presently.

Canners Program

But it does take in the National Canners Association whose members are growers and food processors. This latter trade association, which has a research staff of 44 and has had a laboratory for 35 years, dedicated a new building with laboratory in Washington, D. C., this May, to cost 2 million dollars. It is interesting to find in this group the following trade associations which focus solely on agricultural products: American Butter Institute, American Dry Milk Institute, American Institute of Baking, American Meat Institute, Dairyman's League Cooperative Association, Quality Bakers of America Cooperative, and the Textile Research Institute.

Trade associations are also widely employing university fellowships. This sponsorship is both on the part of those associations with limited research budgets and those supporting research in their own or other laboratories. Cooperative research work with universities by trade associations is especially adapted where less expensive scientific instruments are required but a large amount of study and attention by men with eminent backgrounds in pure sciences, such as chemistry, physics, bacteriology, botany, etc. Projects other than these are often, but not invariably, beyond the facilities of state or highly endowed educational institutions.

A third method which trade associations have found efficient for technical and scientific research on problems common to their members or groups thereof is through the use of fellowships at non-profit research institutes. Some of the institutes are affiliated with universities, whereas others have a sectional or state identification. Among the larger and better known research institutes are: The Mellon Institute of Industrial Research, Batelle Memorial Institute, the Armour Research Founda-

tion of the Illinois Institute of Technology. Some of the larger trade associations which maintain their own laboratories but which had rather unpretentious beginnings, placed their projects in the hands of the staffs of research institutes for several years. The research services at the larger institutes are broad and varied. The libraries are very complete on subject matter within their domain.

Some trade associations have made use of the research and testing facilities available in government laboratories and state agricultural experiment stations. The National Bureau of Standards is most frequently mentioned of the U. S. agencies cooperating with associations in this work.

One survey gave a total of 104 associations of state to national organizational basis which sponsored nearly 160 nutritional, food processing and other research projects at 44 state experiment stations in 1946.⁸ Of this number, 43 sponsored research on mechanization, processing, nutritional chemistry and industrial utilization; 19 carried on studies connected with plant improvement; 13 supported soil practice and plant nutrition studies; 9 were interested in insect control work; 6 were concerned with animal improvement; and 6 with marketing and farm management problems.

Not all problems are suitable for cooperative research projects, which should be the type embarked upon by trade associations. It goes without saying that only those research projects which are of mutual interest to the members of a trade association or a subdivision thereof should become a part of the program. In cooperative research there should exist a wide-felt need of the knowledge which may be forthcoming. A research administrator familiar with research efforts of trade associations has given this guide: "In general, it has been learned that studies of raw materials, research on extension of the commercial uses of products, and standardization work are the types of scientific investigation that can be carried on most advantageously by associations."

Primarily Food

The soybean's ultimate uses to date classify it primarily as a food processing industry—food for human consumption and feed for livestock and poultry. In the 1949 Soy-

Should ASA

have its own

research program?

The author, an

attorney in

Washington, D. C.,

engaged in

chemical patent

and trademark work,

tells of many

associations

conducting extensive

research programs.

bean Blue Book the listings by types and number of entries under manufacturers and handlers of soy foods, including oil, far exceeds the listings by types and number of entries under manufacturers and handlers of industrial products employing soybeans. It is the writer's opinion that the industrial usages of this bean and perhaps the vine can be increased by technological cooperation and research provided through the American Soybean Association. Systematic, comprehensive, long range scientific and market research should progressively result in discovering novel compositions, improving present products, extending present uses or finding new applications for the components of soybeans. Research has solved innumerable problems for individual com-

PAUL D. BOONE





An example of research by a processing firm is this research bakery of Central Soya Co., Inc.

panies and dozens of trade associations. It has built new markets for them and brought progress and prosperity to this nation.

The writer will discuss in conclusion the research organization and activities of the well-known California Fruit Growers Exchange System. This structurally is not a trade association but its research helps the grower and the processor alike. As far back as 1923-'24 when this writer was at Yale University, this entity was financing at least one fellowship there on nutrition and vitamin content in the department of physiological chemistry. Would anyone deny that this has not paid off in financial return to growers and packers alike? In a pamphlet concerning the Exchange it is stated: "In its nutritional research work, the advertising department utilizes the findings of other research institutions . . . Joint projects are undertaken with research institutions throughout the country."

The Exchange has a bureau of pest control consisting of an entomologist and three assistants. This is available at all times for consultation and assistance to growers and packing-house managers who are confronted with insect-pest problems. It publishes monthly circulars to tell growers of timely and acceptable methods of pest control,

particularly toward using insecticides which have the least harmful effect on the quality of the fruit. The cost of the citrus pest control is an expensive but necessary cultural practice.

The field department of the Exchange is responsible for providing the growers with scientific information on harvesting, packing and the handling of orchard insect problems. The research department of the Exchange is concerned with studying and developing new products, new processes and methods. One division studies problems of storage, pre-cooling and respiration of fruit. Another section directs its work toward developing products from the juices of all citrus fruits. Another section centers its activities to develop products from the peel constituents of the fruit. When it is considered that there are two large plants manufacturing by-products, tangible results have come about from the research. A control laboratory is also set up under the research department.

The writer does not maintain that research has been the major factor in good financial return in the California citrus industry. But technological research has gone on for 20 years or more there, and had it not paid off directly and indirectly it would not have stood this test.

Research is assurance for continued and an even greater prosperity. It is not new with trade associations handling agricultural products. Systematic, annual research of pure and applied natural sciences is an activity essential to the maintenance of the stability of market and price to the soybean grower and processor.

BIBLIOGRAPHY

1. "2¢ For Research"—Pamphlet by the National Association of Manufacturers of the United States of America, Jan. 1941.
2. "Industrial Research Laboratories of the United States," 7th Ed.—Published by National Research Council.
3. "Oil and Gas J.," July 3, 1941, p.11.
4. "J. of Commerce," October 3, 1941.
5. "Trade Association Industrial Research," by Gustav E. Larson, U. S. Dept. Commerce, yr. 1948.
6. "Trade Association Industrial Research," by Gustav E. Larson, U. S. Dept. Commerce, yr. 1948.
7. "The Philosophy of Cooperative Research," by C. B. Veni, S&E Journal, July, 1946.
8. "The Citrus Industry and the California Fruit Growers Exchange System"—Circular No. C-121, U. S. Dept. Agr., June 1940.

— s b d —

TRICHLOROETHYLENE PLANT IN MINNESOTA

Blooming Prairie Cooperative Mill & Elevator Co., Blooming Prairie, Minn., are constructing a new soybean processing plant to aid local producers in handling their crop.

Four 12,000-bushel storage tanks to handle beans and four smaller tanks for storing refined oil will be erected. Dimensions of the plant will be 88 by 113 feet. It is expected to be in operation by Dec. 1.

The new trichloroethylene process of extracting soybean oil developed by Iowa State College scientists will be given a large-scale application in the Blooming Prairie plant. The soybean oil meal will be sold largely in the local territory served by the mill.

Cost of the mill is estimated at more than \$250,000 of which \$100,000 has been raised by local farmers.

Lysne Construction Co. of Blooming Prairie will construct the storage tanks and Crown Iron Works, Minneapolis, has the contract for installation.

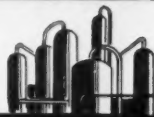
Palmer N. Peterson is manager of the cooperative. Officers are: Ormanzo Peterson, president; H. Symes, vice president; and T. B. Peterson, secretary-treasurer. Carl Hjelman, H. C. Olson and O. K. Benson are directors.

SOYBEAN DIGEST

The Petroleum Industry Does It



The Chemical Industry Does It



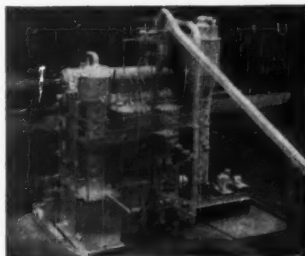
And ANDERSON Does It



Puts Hazardous Operations
OUT IN THE OPEN
Where They Belong

Petroleum and chemical engineers have known for years that certain types of hazardous operations belong out in the open. Then hazards are reduced to a minimum. They build equipment for these operations, however big or small, as self-supporting structures. Their experience has shown that the cost of building and operating these units is less than for the same equipment housed in a building.

With this background, the V. D. Anderson Company designs and builds solvent extraction units out in the open *where they belong*. These self-supporting units are usually cheaper to build . . . as no open-sided or multi-story building is required—only a small building is necessary for preliminary and finished product operations. Since the original investment by the owner is lower, he usually spends correspondingly less for upkeep and insurance, as well as interest on this investment. In addition, since solvent vapors are not confined, the explosion hazard is eliminated and fire hazard reduced. Before you buy, get all the facts on Anderson Solvent Extraction Units. Drop us a line today.



Anderson Solvent Extraction Unit

THE V. D. ANDERSON COMPANY
1976 West 96th Street • • Cleveland 2, Ohio

ANDERSON

**EXPELLERS AND
SOLVENT EXTRACTION
EQUIPMENT**

New Facts About SOYBEAN OIL AND SOY PROTEIN

As Revealed in a Study of
20 Varieties of Soybeans

By SOYBEAN RESEARCH COUNCIL

A recently completed study of 20 varieties of soybeans with respect to quality and quantity of oil is announced by the Soybean Research Council. These 20 samples of soybeans, representing the most promising strains now being grown at several stations, were selected and prepared by J. L. Cartter and colleagues of the U. S. Regional Laboratory at Urbana, Ill. The study of these soybeans was carried out in the pilot plant and laboratories of The Buckeye Cotton Oil Co., Ivorydale, Ohio under the direction of O. H. Alderks, member of the Soybean Research Council.

Following is a description of the 20 varieties of soybeans. Ten samples represented strains grown in the North Central states and ten in the Southern states.

The 20 varieties:
Lincoln, Richland, A4-107-12 (a line from a cross between Mukden and Richland), A3k884 (an early type being developed out of the cross Richland by Mukden), H5 (a selection out of cross between Mukden and Mandarin, C463 (selection from Dunfield-Mansoy cross), Chief, Earlyana, A3-176 (selection from Illini-Dunfield cross), Lincoln as above, S-100, Gibson, Ogden, Arksoy 2913, N44-92 (selection from Tokyo-P. I. 54610 cross), N44-774 (another selection from same cross), Roanoke, C. N. S., Acadian and Mamloxi.

Among the many studies made of these soybeans, one of the most interesting phases centered on the yield and quality of soybean oil with respect to flavor reversion.

Samples analyzed for oil varied from 17.41 percent to 22.9 percent dry basis, equivalent to a difference of 98.8 pounds per ton of 10-per-

cent-moisture soybeans. The quality and flavor stability of each solvent extracted oil from the 20 strains was top No. 1 grade. The oils were equal in flavor stability to the best quality commercial oils.

The work was planned to determine whether the genetic composition of various soybean strains differed in regard to their ability to produce oil of good quality and whether the oils from these various strains might differ in flavor stability for any reason.

It also was desired to determine if, by agronomic selection and development of soybean varieties, it would be possible to reduce the linolenic acid content in soybean oil.

Some investigators working on the soybean oil flavor reversion problem have attributed flavor reversion to result from oxidation products of

the more unsaturated portion of the oil. Also, it has been suggested that various minor constituents in the oil possibly affected flavor stability by acting as catalysts to promote a certain type of oxidation.

Cottonseed, peanut, sesame, and sunflower seed oils contain no linolenic or triple unsaturated fatty acids, and flavor reversion of the soybean oil type, therefore, is not encountered with these oils.

If linolenic acid could be eliminated from the composition of soybean oil perhaps the flavor reversion problem would be eliminated as well.

In addition to the quality of oil, the strains of soybeans were examined for quantity of oil, also.

Three of the twenty strains of soybeans investigated in this work (Lincoln, Richland, A-4-107-12) were composites prepared by mixing equal quantities of seed from each of the four locations in the Cornbelt (Lafayette, Indiana, Urbana, Illinois, Ames, Iowa and Columbus, Ohio), so that the resulting lots would reflect a general average of growing conditions and would give a good comparison between varieties. Seven other strains from the North Central states and ten strains from the Southern states were made up of carefully composited samples from the uniform soybean variety tests. This method of preparation was chosen so that location and soil differences would cancel out as nearly as possible, thus giving a good comparison of germ plasm.

Representative samples of the 20 varieties of soybeans were analyzed in duplicate for percentage of oil,

TABLE 1—SOYBEAN ANALYSIS
(Samples analyzed in duplicate as indicated.)

Strain	% Oil (Dry)	% Protein (Dry)	% Fat (Dry)	% H ₂ O
1. *Lincoln composite	20.64, 20.58	41.92, 42.00	9.4, 9.4	
2. *Richland composite	20.25, 20.20	41.38, 41.31	9.1, 9.2	
3. *A4-107-12	20.58, 20.25	42.44, 42.41	8.7, 8.7	
4. A3K 884				
5. H5				
6. C 463				
7. Chief				
8. Earlyana				
9. A3-176				
10. Lincoln				
11. S-100	19.89, 19.84	42.69, 42.56	8.5	
12. Gibson				
13. Ogden	21.10, 21.10	41.13, 41.53	7.8	
14. Arksoy 2913	20.09, 19.87	43.53, 43.31	7.9	
15. N-44-92				
16. N44-774	19.76, 19.92	41.63, 41.44	7.4	
17. Roanoke	22.62, 22.90	39.88, 39.81	7.6	
18. C.N.S.				
19. Acadian	19.64, 20.08	39.47, 39.31	9.1	
20. Mamloxi	17.41, 17.63	44.19, 44.41	8.4	

Sample lost due to accident in laboratory

TABLE NO. 1 (A)

Lincoln				
A Lafayette, Ind.	20.48, 20.33	42.10, 42.38	9.5, 9.5	
B Ames, Iowa	20.77, 20.88	42.06, 41.88	9.5, 9.5	
C Urbana, Ill.	21.44, 21.44	40.56, 40.25	9.3, 9.5	
D Columbus, Ohio	19.85, 19.65	43.00, 43.31	8.8, 8.9	
Richland				
A Lafayette	20.59, 20.46	41.53, 41.56	9.2, 9.1	
B Ames	20.22, 20.15	40.69, 40.56	9.0, 9.2	
C Urbana	20.76, 20.81	40.19, 40.06	8.7, 8.7	
D Columbus	19.47, 19.32	43.00, 43.25	9.6, 9.7	
A4-107-12				
A Lafayette	21.03, 20.89	40.94, 40.69	8.0, 8.1	
B Ames	21.24, 21.26	42.19, 42.66	8.9, 9.0	
C Urbana	20.48, 20.44	42.94, 42.81	9.2, 9.0	
D Columbus	19.57, 19.58	43.75, 43.44	8.8, 8.6	

Worth Considering for **EXTRACTION**
of FATS, MEAT SCRAP and VEGETABLE OILS

HERE'S WHAT IT OFFERS:

1. NONFLAMMABLE AND NONEXPLOSIVE

—Plant design does not require expensive provisions for grounding, safety barriers, ventilation, fire- and explosion-proof equipment or construction. Extraction plants can be located adjacent to other processes and in highly industrialized areas. These plants take the usual insurance rates for the district.

2. ECONOMICAL RECOVERY — The solvent is readily and almost completely recovered for reuse in extraction system.

3. NARROW BOILING RANGE — Distills completely at 86.5 to 87.5° C. (760m). No high boiling residues are left in extracted material.

4. STABLE — Won't affect or be affected by common construction metals, even in the presence of excessive moisture.

5. SPEEDY SOLVENT ACTION — The rapid penetration into fibrous materials means the quick, thorough extraction of vegetable oils, such as soya bean, cotton, peanut, flax, tung, etc.; animal fats from meat scraps; fish oils. Low viscosity and low surface tension permit thorough, quick penetration.

6. READILY AVAILABLE IN COMMERCIAL QUANTITIES

—Prompt shipments can be made in drums from stocks in principal cities; also carloads or tank cars. For many years, in thousands of plants, in many industries—dry cleaning, solvent extraction, metal fabrication—Tri-

chloroethylene in prescribed equipment has been found to be a safe, economical, efficient solvent.

FOR YOU! More information about Trichloroethylene, assistance in using it for extraction. Just clip and mail coupon below.

DU PONT
TRICHLOROETHYLENE
Nonflammable
Nonexplosive
SOLVENT

CLIP THIS COUPON

**DU PONT
ELECTROCHEMICALS**



BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

E. I. du Pont de Nemours & Co. (Inc.) S-1
Electrochemicals Dept., Wilmington 98, Delaware
Please send me more information on Du Pont Trichloroethylene for Extraction.

Name

Position

Firm

Address

percentage of ammonia and percentage of water. The variety Roanoke contained the most oil, namely 22.76 percent dry basis.

Table No. 1, page 24, shows the difference in oil content and in Table No. 1-A, the individual analyses are shown for Lincoln, Richland and A4-107-12 strains grown in the Cornbelt, where a maximum difference in oil content from 19.65 percent to 22.4 percent dry basis, is shown.

Results of the edibility tests of oil from the 20 strains of soybeans showed the free fatty acids of the extracted oils were low, varying from .3 to .9 percent and the refining losses were uniformly low with three exceptions.

All of the solvent extracted refined and bleached oils from the selected strains were tested for flavor stability. The unhydrogenated oils show exceptional uniformity of flavor quality. The aged flavors were obtained after exposure in new, open tin cans at 140 degrees F for 2 days.

The hydrogenated and deodorized oils had remarkable uniform low colors, varying from .1 to .3 red. These oils were flavored fresh after aging several days in new, open tin cans at 140 degrees F.

All of the oils showed flavor reversion after aging. If there were differences in quality and flavor stability among these oils the present organoleptic tests which were used are not sufficiently accurate to show any slight differences in single tests.

II

Still another important and interesting result of the research deals with the yield and quality of isolated protein for industrial usage.

Versatility of the soybean continues to stir the fancy of industrialist and technologist alike. In but a comparatively short period industrial uses of the oft-called "miracle bean" have expanded immeasurably. Research is broadening the field of usefulness with the development of new products for home, farm and industry. The lowly soybean represents a forward step in the economic and scientific march of time, according to authorities in University and industrial fields.

Samples analyzed for protein in the laboratory study of the 20 varieties of soybeans varied from 39 percent to 44 percent dry basis. This is equivalent to a difference of 91.8 pounds per ton of 10-percent-moisture soybeans.

Average yield of all 20 strains, of alkali extracted purified isolated protein, was 36.1 percent, dry basis.

The yields varied widely from 33.1 percent to 42.7 percent dry basis. Roanoke variety and Arksoy 2913 gave the highest yields of industrial protein. Arksoy 2913 is a strain selected out of the variety Arksoy by the Arkansas Experiment Station and the variety Roanoke is a selection from the variety Nanking, developed by the U. S. Regional Soybean Laboratory in connection with the North Carolina Station.

Table No. 2 below shows the pure protein yields from the twenty soybean flakes. These yields, as reported here, are all higher than would be realized in commercial production since the extracted flakes were "air desolventized" at room temperature. In commercial practice, final traces of hexane usually are removed from the flakes by steam stripping. Higher desolventizing flake temperature will de-

nature some proteins resulting in lower yields.

The color of the purified proteins obtained from all varieties was in each case normal.

Satisfactory solution times were found on five samples tested. This property of isolated protein depends on protein extraction and processing conditions rather than on soybean strain. A uniform solution time of 4½ minutes was obtained on isolated protein from Roanoke, Arksoy 2913, CNS, N44-92 and Chief.

III

This concerns the results obtained from the study of the quantity and quality of protein for nutritional purposes as indicated by amino acid composition of raw and toasted soybean flakes and the availability of amino acids based on in-vitro enzyme digestion tests.

Proteins are made up of some 21 known amino acids. The amino acids selected for this work were the 10 considered "essential" for growth (of the rat), and one, present in large amounts, which is considered commercially important as a condiment (glutamic).

No significant differences were found between the amounts of any one of the "essential" amino acids contained in the 20 varieties of soybeans tested. Results of the test gave no indication that superior protein soybean oil meal might be produced from any one particular strain.

The amino acid analysis of both raw and toasted flakes were made by Dr. C. N. Lyman and co-workers of the department of biochemistry and nutrition of the Texas Agricultural and Mechanical College.

Table No. 3 is printed on page 27, and shows the amino acid composition of raw flakes expressed as

TABLE NO. 2
YIELDS OF ALKALI EXTRACTED
PROTEINS

	A Protein containing per 100 gm. flks. con- taining 90% H ₂ O %	B Bone dry protein per 100 gm. flks. con- taining 5% H ₂ O %
A4-107-12 (1st	44.0	34.4
Richland (1st	43.4	33.1
Lincoln (1st	45.1	34.8
Chief	47.8	36.3
N44-92	49.6	38.2
Arksoy 2913	51.2	38.9
Gibson	50.4	38.2
CNS	49.5	38.2
N44-774	46.1	34.2
C-463	46.3	35.6
S-100	49.3	38.1
H-5	48.2	37.9
A3K-884	46.5	34.6
A3-176	46.8	34.7
Lincoln (2nd	45.1	35.7
Earlyana	48.3	37.4
Mamloxi	44.8	34.9
Roanoke	55.6	42.7
Acadian	47.8	37.2
Ogden	50.9	39.3
Earlier results for comparison:		
A4-107-12 1st	48.3	34.3
Richland (1st	47.2	33.3
Lincoln (1st	49.6	37.5

Apparently no variety is superior to other varieties in producing high quality meal.



percent of the crude protein. The same data in Table No. 4 is expressed as percent of the meal.

The greatest difference between the strains of soybeans is in their lysine contents, inspection of Table No. 3 shows. Differences are insignificant, however.

No differences of any consequence were obtained in the rat growth tests, conducted with flakes from the

TABLE NO. 3

AMINO ACID COMPOSITION OF SOLVENT EXTRACTED NON-TOASTED FLAKES OBTAINED FROM 20 VARIETIES OF SOYBEANS, EXPRESSED AS PERCENTAGE OF CRUDE PROTEIN

Soybean Variety	Protein (N x 6.25)	Arginine	Histidine	Lysine	Tryptophane	Phenylalanine
Acadian	48.89	7.75	2.29	6.52	1.51	4.95
Arksoy	50.92	7.56	2.30	6.54	1.45	5.11
A3-176	48.82	7.68	2.25	6.70	1.56	5.02
A3K-884	47.24	8.09	2.26	6.88	1.50	4.87
A4-107-12	47.95	8.01	2.23	6.53	1.48	4.84
Chief	48.23	7.82	2.30	6.59	1.56	5.04
C.N.S.	50.84	7.87	2.36	6.00	1.55	5.11
C-463	47.24	7.54	2.37	6.90	1.61	5.07
Earlylana	48.81	7.72	2.29	6.74	1.56	5.02
Gibson	48.19	7.49	2.30	6.91	1.54	5.08
H-5	49.42	7.22	2.16	5.97	1.54	5.04
Lincoln	48.86	7.53	2.29	6.67	1.64	5.22
Lincoln No. 3	46.38	7.72	2.33	6.73	1.40	5.17
Mamloxi	49.49	7.96	2.40	7.07	1.44	5.23
N44-92	48.96	7.60	2.49	6.70	1.49	5.17
N44-774	46.38	7.85	2.37	6.73	1.57	5.13
Ogden	47.81	7.49	2.34	6.76	1.42	5.31
Richland	46.38	8.30	2.35	6.47	1.57	4.80
Roanoke	47.40	7.64	2.47	6.48	1.48	5.23
S 100	49.98	7.56	2.52	6.54	1.46	5.12

Soybean Variety	Threonine	Valine	Leucine	Isoleucine	Methionine	Glutamic Acid
Acadian	3.95	5.44	7.75	5.34	1.43	18.1
Arksoy	3.87	5.30	7.86	5.30	1.39	18.9
A3-176	3.93	5.43	7.90	5.34	1.43	18.6
A3K-884	4.06	5.31	7.85	5.42	1.40	18.5
A4-107-12	3.84	5.28	7.93	5.22	1.34	18.2
Chief	3.96	5.41	7.86	5.20	1.48	18.4
C.N.S.	3.72	5.35	7.59	5.19	1.31	18.4
C-463	3.96	5.40	7.96	5.39	1.45	18.9
Earlylana	3.98	5.31	7.95	5.31	1.37	18.7
Gibson	3.82	5.31	8.13	5.35	1.41	18.6
H-5	3.58	5.22	7.97	5.24	1.38	17.9
Lincoln	3.91	5.42	8.08	5.32	1.40	18.4
Lincoln No. 3	4.03	5.48	8.45	5.43	1.53	19.2
Mamloxi	3.86	5.34	7.94	5.53	1.50	18.3
N44-92	4.04	5.47	8.17	5.29	1.35	18.5
N44-774	3.99	5.17	8.04	5.28	1.35	17.9
Ogden	3.83	5.31	8.16	5.48	1.28	18.5
Richland	3.84	5.20	7.98	5.18	1.37	18.8
Roanoke	3.88	5.23	8.02	5.15	1.41	19.0
S 100	3.76	5.32	7.98	5.32	1.42	18.6

strains which showed the largest and smallest amounts of lysine.

It may be concluded, therefore, that the raw flakes differ only slightly in the percentages of the various amino acids which they contain.

The toasted flakes contained less lysine than the hexane extracted desolventized raw flakes. An average drop was shown from 6.60 percent to 6.28 percent. Other "essential" amino acids were not affected.

Summarizing the availability of

TABLE NO. 4

AMINO ACID COMPOSITION OF SOLVENT EXTRACTED NON-TOASTED FLAKES OBTAINED FROM 20 VARIETIES OF SOYBEANS, EXPRESSED AS PERCENTAGE OF THE FLAKES

Soybean Variety	Protein (N x 6.25)	Arginine	Histidine	Lysine	Tryptophane	Phenylalanine
Acadian	48.89	3.79	1.12	3.19	0.74	2.42
Arksoy	50.92	3.85	1.17	3.33	0.74	2.40
A3-176	48.82	3.75	1.10	3.27	0.76	2.45
A3K-884	47.24	3.82	1.07	3.25	0.71	2.30
A4-107-12	47.95	3.84	1.07	3.13	0.71	2.32
Chief	48.23	3.77	1.11	3.18	0.75	2.43
C.N.S.	50.84	4.00	1.20	3.06	0.79	2.40
C-463	47.24	3.56	1.12	3.26	0.76	2.40
Earlylana	48.81	3.77	1.12	3.29	0.76	2.54
Gibson	48.19	3.61	1.11	3.33	0.74	2.45
H-5	49.42	3.57	1.07	2.95	0.76	2.49
Lincoln	48.86	3.68	1.12	3.26	0.80	2.55
Lincoln No. 3	46.38	3.58	1.08	3.12	0.74	2.40
Mamloxi	49.49	3.94	1.19	3.50	0.71	2.59
N44-92	48.96	3.72	1.22	3.28	0.73	2.53
N44-774	46.38	3.64	1.10	3.12	0.72	2.38
Ogden	47.81	3.58	1.12	3.23	0.68	2.54
Richland	46.38	3.85	1.09	3.00	0.73	2.23
Roanoke	47.40	3.62	1.17	3.07	0.70	2.48
S 100	49.98	3.78	1.26	3.27	0.73	2.56

Soybean Variety	Threonine	Valine	Leucine	Isoleucine	Methionine	Glutamic Acid
Acadian	1.93	2.66	3.79	2.61	0.70	8.83
Arksoy	1.97	2.71	4.00	2.70	0.71	9.64
A3-176	1.92	2.85	3.86	2.61	0.70	9.08
A3K-884	1.92	2.51	3.71	2.52	0.66	8.75
A4-107-12	1.84	2.53	3.80	2.50	0.64	8.75
Chief	1.91	2.61	3.79	2.51	0.71	8.90
C.N.S.	1.89	2.72	3.86	2.64	0.67	9.33
C-463	1.87	2.55	3.76	2.54	0.69	8.91
Earlylana	1.94	2.59	3.88	2.59	0.67	9.15
Gibson	1.84	2.56	3.92	2.58	0.68	8.95
H-5	1.77	2.58	3.94	2.59	0.68	8.86
Lincoln	1.91	2.65	3.95	2.60	0.68	8.59
Lincoln No. 3	1.87	2.54	3.92	2.52	0.71	8.90
Mamloxi	1.91	2.64	3.93	2.74	0.74	9.05
N44-92	1.98	2.68	4.00	2.59	0.66	9.08
N44-774	1.85	2.40	3.73	2.45	0.63	8.29
Ogden	1.93	2.54	3.90	2.62	0.61	8.85
Richland	1.78	2.41	3.70	2.39	0.64	8.72
Roanoke	1.84	2.48	3.80	2.44	0.67	8.99
S 100	1.88	2.66	3.99	2.66	0.71	9.30

amino acids based on in-vitro enzyme digestion tests, in-vitro enzyme digestion followed by microbiological assay was applied to methionine, lysine and tryptophane.

A summary of these results follows:

Amino Acid	Total in Protein	Amount in the protein available to in-vitro enzyme digestion	Average % Range %
Methionine	1.40%	0.70	0.57 to 0.84
Lysine	6.62	5.40	4.66 to 6.15
Tryptophane	1.53	1.10	0.97 to 1.19

When the results are considered in the light of the accuracy of these new methods, it appears certain that there are no real differences between the varieties in available tryptophane. There seems to be some possibility of significant differences in the availability of methionine and lysine.

— s b d —

FAIRCHILD HONORED



David Fairchild, an early pioneer of soybeans, was chosen recently to receive the Johnny Appleseed award of 1949, highest honor of the Men's Garden Clubs of America, at their convention in Minneapolis, Minn. The 80-year-old horticulturist, now retired, lives at Homestead, Fla. He is former chief of the government plant production service. An article "Early Experiences with the Soybean" by Fairchild appeared in the November 1948 issue of the Soybean Digest.

DICKINSON BROTHERS Co.

VEGETABLE OILS AND MEALS
BROKERS



2420 Board of Trade

141 West Jackson Blvd.

HArrison 7-3793

CHICAGO 4, ILL.

History and Accomplishments

OF THE AMERICAN SOYBEAN ASSOCIATION

By

E. F. "SOYBEAN" JOHNSON

Assistant Manager Delphos Grain and Soybean Products Co.

THE AMERICAN Soybean Association was organized in the fall of 1920 at a meeting of some 600 soybean enthusiasts at Taylor Fouts Farms at Camden, Ind. The 1921 meeting was held on Riegel--The Meharry Farms at Tolono, Ill.

In this same year a sectional meeting was held in Williams County, Ohio, on my farm. This was the first soybean meeting for demonstration of farm practices for growing soybeans ever held in Ohio. Many of you may recall this meeting. That was back in the days when the Ito San was still a base variety, and Manchuk, Black Eyebrow, Medium Green, Peking, Elton and A.K. were major varieties.

For many years the Association existed mainly through the untiring efforts of W. J. Morse of the USDA, now rightfully recognized as the "daddy" of soybean production and promotion in America, ably assisted by many other university agronomists. In this honor roll must appear such names as W. L. Burlison and J. C. Hackleman of Illinois, Keller Beeson of Purdue, Hanger and Parks of Ohio State, Hughes and Dyas of Iowa, and Briggs of Wisconsin.

The early problems of the Association were mainly varieties, adaptation of existing machinery to growing the crop, and harvesting and threshing. Most of the harvested crop moved for seed, partly for emergency hay crops, partly for silage, and partly to new growers interested in the crop.

For 13 years, the officers of the Association were agronomists from various universities in the Cornbelt. The presidency was usually extended to the ranking soybean professor in the state where the next annual meeting would be held. A review of the papers presented at many of these meetings gives one a clear in-

sight into what were then the problems of the soybean grower.

Every year one or more papers were presented on the use of soybean oil. Could it be used in paint? Would it work in food products? How did soybean oil meal compare with other proteins as a feed for hogs, cattle, sheep and chickens? Frequent papers appeared questioning the possible expansion of the soybean crop. Even I in 1940 wondered if the anticipated crop of 110 million bushels of soybeans could be successfully marketed.

It is conceded today that the activities of your Association had much to do with the adaptation of the large combine to soybeans. All of us today realize that without the adaptation of the combine, the soybean industry as we know it could not have existed. During the first 20 years of soybean growing on my farms, we harvested our soybeans by catching them just as they were turning, cutting with mower with side-delivery windrower, picking them up when cured with a slow speed drum hay loader, storing the beans, pods and straw in the barns, and during the winter, threshing with a special rebuilt Case grain separator. The combine has reduced these costs to less than one-third, even with allowance for increased wages and other costs.

The 1940 annual meeting of the Association held at Dearborn, Mich., as guests of Henry Ford, was perhaps the most significant of all meetings of the Association to that date. As I read the published report printed after the meeting, I find in rather small print two significant statements. "Two definite suggestions were made to be developed by the board of directors, namely that the Association make plans to employ

an executive secretary, and that a soybean periodical be published as an official organ of the Association." That, my friends, marks the official birth of Geo. Strayer, and the Soybean Digest, as far as the American Soybean Association is concerned.

The policy of having a university agronomist serve as chief officer of the Association had been abandoned the previous year. Much of the reorganization and solid foundation built, was due to the able leadership of Glen Mellroy who served as president for 3 consecutive years during this period. Since 1940 the American Soybean Association has driven ahead day after day for those things that were best not only for the soybean grower, but for the soybean user and the nation as well. The only reason it has not done more is due to lack of enough membership of active interested growers, and lack of finances to meet an ever increasing demand on its activities.

The past relationship of the growers' association to the soybean processors has always been one of mutual interest and concern over vital problems of each group. For years the Association has taken the leadership in working out a more orderly marketing of soybeans. Like any new crop, growers expanded their acreage, with no thought of a similar expansion of storage facilities.

● The author has been intimately connected with the American Soybean Association since the beginning, and he has definite ideas about the problems confronting us now. From a talk before Ohio producers.



"Soybean" Johnson in office of Delphos Soybean Products Co.

Select Quality SEEDBURO equipment

for Seed Cleaning, Grading, Mixing and Treating

Seedburo is the symbol of quality and service to seedsmen the country over. Since 1912 improvement in seed testing, cleaning, grading, mixing, germinating, and handling procedures has been a Seedburo objective. All equipment is fully tested and guaranteed . . . meets rigid Seedburo standards of quality and performance.

Seedburo's 37 years of specialization and experience in the seed trade are at your disposal. Our trained staff is prepared to give you prompt assistance in the solution of any of the above problems you may have, or explain the exact application of Seedburo equipment and how it can help you realize greater profits.



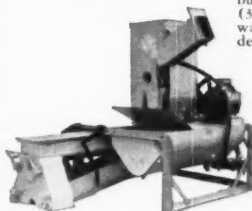
New '49 Catalog Contains complete descriptions and illustrations of more than 500 items for the seed and grain trade. If you do not have a copy, send for it today.

SEEDBURO

EQUIPMENT COMPANY

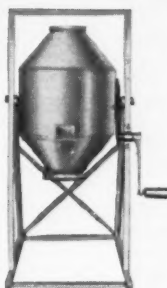
711 Converse Building
Chicago 6, Illinois

Calkins Slurry Treater



Here's a slurry treater with seven exclusive advantages: (1) Weighing pan is freed from elevating slurry in buckets . . . weighs seed with scientific accuracy. (2) Special pump, with bearings above slurry level, delivers slurry to metering bucket. No priming, no leaking. (3) Singular metering bucket always fills, always dumps, always delivers the same amount. Instant change from 23 to 46 c.c. (4) Weir distributes slurry over each charge of seed. (5) Removable screen. (6) Slurry agitator shaft driven from above. (7) Instant clean-out of treating chamber. Calkins standard treater . . . **\$595.00**. Special model for treating cotton seed . . . **\$630.00**.

MacLellan Batch Seed Mixer



Ideal for mixing all kinds of seed in any quantity, from 5 pounds to a ton. Can also be used for treating and inoculating seeds. Mixes 10 to 15 batches per hour. Twelve complete separations and mixes for every revolution of the drum.

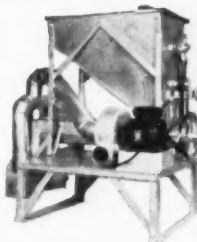
There are no moving parts in the drum. Mixers through the 4-cubic-foot size can be operated by hand. Price range from **\$28.75** and up. Write for full information on sizes and prices.

VAC-A-WAY Seed and Grain Cleaner and Grader



Designed for the requirements of custom cleaners, elevators, seed stores, Farm Bureaus and for use on large farms. Cleans and grades 60 to 75 bushels of large grain or 10 to 25 bushels of small seed per hour. Twenty screens constitute the standard set for cleaning and grading oats, soybeans, wheat, lespedeza, millet, unhulled clover, timothy and alfalfa. You can select the set that meets your requirements. No. 75 model, including cleaner, stand, screens, elevator and hopper . . . **\$311.00**.

Gustafson Powder Treater



Treats seed with any brand of dry chemical powder. Amount of powder fed is visible and can be accurately regulated by calibrated control. A long mixing chamber and special agitator assure thorough coating of every kernel. Speed of operation easily regulated. Mixing operation is entirely enclosed. Suction fan draws off all loose powder. Model H, with capacity of 50 to 500 bushels per hour, plus motor, fan and two-way bagger and stand . . . **\$295.00**. Model K, up to 800 bushels per hour, plus fan, motor and bagger . . . **\$375.00**.

ties. During World War II, 90 percent of the soybeans moved direct to processors at harvest time. Your Association recognized the tremendous burden such marketing gave the processors.

The largest field of your Association activities has been in the legislative field. The officers have been alert to every congressional move that would reduce the market for soybeans or the resulting products, and in turn would have its effect on prices paid to growers.

The first gigantic problem that faced the Association was the threatened repeal of the reciprocal trade agreement over the stubborn determination of Secretary of State Hull. A fats and oils council was formed largely through the efforts of the soybean and cotton associations. McIlroy and Wing spent about 2 weeks in Washington as official representatives of the Soybean Association. For the first time in farming history the dairy associations and all the livestock associations joined in a protest against lowering duties on foreign fats and oils. Although your Association did not win a complete victory, they were able to save a portion of the things de-

manded which have meant millions of additional dollars to every producer of oil or fat in the United States.

During the last 2 years your Association's activities have been correctly directed against the margarine taxes levied by federal and state laws.

With the exception of the years we were engaged in War I and II and a short postwar period, foreign fats and oils have been the largest single factor in determining the price of fats and oils in the United States. To better understand the seriousness of this importation, it is necessary to understand that these imports include two types of products. The most important group included those fats and oils that are the products of natural flora of the country from which they originate.

Here in the U. S., we produce soybean oil as a cultivated crop, growing on land worth \$200 to \$300 per acre. We have thousands of dollars invested on each of these farms in tools and machinery. We have heavy taxes to pay on the land, the buildings and on the machinery. Hundreds of man-hours (and tractor-hours) are required to

produce a crop of soybeans, from which soybean oil is derived.

Likewise the cotton farmer has similar investments, similar taxes and similar labor-hours. The dairyman who produces butter has the same expenses and even higher labor-hours. The hog raiser, the beef cattle grower, the peanut farmer, all have these tremendous costs of production.

Foreign Threat

With this picture in your mind, let us think of the foreign oils that come from wild lands, untilled forests, bushes that nature produces in abundance. The Babassu nut, the palm nut, even most of the copra and coconut oil, and in some degree the castor oil bean are all plants that grow at least in semi-wild state, on land with little or no taxation, and with no cultivation costs. The only factor that limits the amount of this class of fats and oils that can come to the United States is the amount that can be harvested and transported to a shipping port, the amount of vessel space available and the price of fats and oils in the United States.

In the 38 years that I have been a grower of soybeans I have seen copra and coconut oil come into the U. S. over a 2c-per-pound duty when soybean oil sold as low as 5c per pound.

We have never had a surplus of fats and oil of domestic origin in the U. S. During the war years it was necessary to ration all fats, even though our farmers and livestock producers doubled the domestic production of fats and oils.

Before War II quotas and duty restrictions held foreign imports of fats and oils to just over 1 billion pounds. In the past 13 months our high prices on fats and oils together with a pressing need for American dollars have month by month stimulated the flow of foreign oils to our shores. During the past 3 months this flow has reached an estimated figure of about 2 billion pounds annually. Yet Washington talks about investigating the shorts for the market break, and broadcasters talk about the huge surplus in the U. S.

No American farmer can hope to compete with high priced land, expensive machinery, ruinous taxes, and labor required with a foreign product that grows wild and has only to be picked up and shipped.

I have become a little disgusted with the campaign now under operation by one section of our fat producing population. I hear state-

DECATUR SOY PRODUCTS COMPANY

Quality — Plus Courteous Service

"Illini" Brand

SOYBEAN OIL MEAL

41% Expeller Type

CRUDE SOYA OIL

Tank Cars Only

We are year-round buyers of Soybeans

Decatur, Ill.

Phone 28541

ments that soybeans are hard on the land. On my farm in Williams County I have been growing two crops of soybeans ever 4 years for the last 30 years. If I were to believe the propaganda of some other fat producers, I would feel my farm was completely ruined. On this land that soybeans are supposed to ruin, I have made membership in the Ohio 100-bushel corn club, and made it before hybrid corn was available. We harvested a 51-bushel wheat crop in the last 3 years. Our corn is averaging about 85 bushels per acre. Does that sound as though soybeans are hard on ground?

Then I hear stories that margarine will put butter off the market. It would seem we should look at facts a little closer and try to stay a little closer to the truth. If the total butter production were divided up evenly among all the folks in the U. S., how much would each have per week?

I have used margarine and butter consistently for some 25 years. Each has its place in our household, and I know the same is true in millions of other homes. Just because soup bones are cheap doesn't cause me to quit eating and liking T-bone steaks. Likewise I want butter for certain uses regardless of the price, but there are other places that I like margarine just as well, and maybe a little better.

Maybe we had better have a law requiring the makers of pancake flour to color it green. Yet, that would be logical, so one could see

the yellow colored butter we use on the cakes. It's hard to see when they are both yellow.

Might it not be better if all fat and oil producers would call a halt to this name-calling and get a united front against the real menace—foreign oils. The only real basis on which this threat can be met today is to restrict its use in retail products in the U. S. The fight should not be against margarine but margarine made from foreign oils.

Your American Soybean Association has always had an unselfish view of all problems. The members realize that to have soybean oil meal, which is the major protein feed for hogs (the producers of lard), cows (the producers of butter and tallow), and all livestock and poultry, one must have a price for soybeans that will allow the producer a return comparable to that he gets from other crops. To get such a return and keep prices of soybean oil meal in keeping with other feeds, a definite part of the soybean price must be secured from the sale of soybean oil. You can't have one without the other.

There is every indication that the acreage of cotton is likely to decline in the next 10 years. Rayon and other synthetic materials are causing serious competition to cotton fabrics. Any decrease in cotton will result in a corresponding decrease in cottonseed oil meal. Soybeans must continue to carry the major burden of protein supply for our livestock.

We cannot have a low price on

soybean oil meal which is fundamental to meat, butterfat and poultry product prices, unless we can get from the soybean oil a sizeable portion of the return that the grower of soybeans must have if he continues to meet our requirements. Here again the problem of foreign oil competition becomes a major consideration.

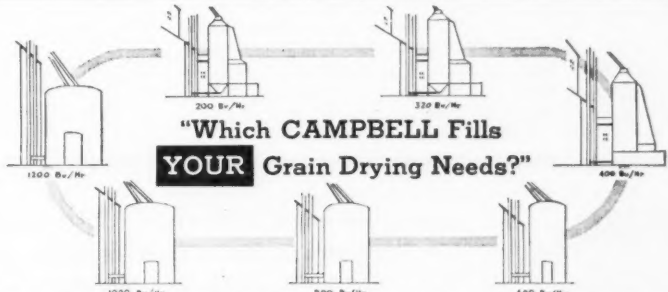
Recently when soybeans were off the 10c permissible limit the Dow Jones ticker in my office carried two statements, one right after the other. As I read them I thought, "Even the operator of this ticker cannot keep related factors apart!" The first statement which I have here is "Pacific Coast advises report sales of Philippine copra at 170 dollars a long ton f.o.b. This is 10 dollars a ton below yesterday's quotation." And without a break in the tape comes the next statement, "Crude soybean oil February through May delivery basis Decatur traded at 11 1/2c per pound, off 1/2c."

— s b d —

FAVOR HR 2023

The board of directors of the National Soybean Processors Association at a directors' meeting in Chicago Oct. 26, went on record in favor of passage of HR 2023, President R. G. Houghtlin has announced.

HR 2023 which would repeal all federal taxes and license fees on margarine, was passed by the lower House during the first session of the 81st Congress. The bill has been made the first order of business in the Senate when it reconvenes in January.



**"Which CAMPBELL Fills
YOUR Grain Drying Needs?"**

Choose A Campbell Dryer With Capacity To Match Your Plant. Whatever your size — a large feed mill or country elevator — a CAMPBELL DRYER is the low cost answer to big-capacity grain conditioning.

Big Profits — Top Quality Grain. Unlike ordinary dryers, CAMPBELL'S exclusive grain drying system tempers grain the same way

nature does it . . . owners everywhere report CAMPBELL dried grain **always** brings highest market prices, or, is perfectly conditioned for year-round storage.

Increase your profits with CAMPBELL . . . The established leader of the grain conditioning field. **Write today** . . . our representative will help you plan a practical and profitable installation.

Corn States HYBRID SERVICE

426 Court Avenue, Des Moines, Iowa

CULTIVATION OF SOYBEANS IN ROMANIA

By **VLADIMIR POPOVSKI**

In the early 30's, the effects of the world crisis were felt very sharply by the agriculture of Bessarabia (Romania) where I owned a farm. The high income of farming, characteristic of the first decade following the war was gone. With the exception of clover seed for which there was a steady market in Germany, all the prices of grain crops dropped to such an extent that the costs of production were not covered.

In the middle 30's, when prices of grain were somewhat higher, the Soybean Co. opened its offices in Romania. This company offered the farmers the cultivation of soybeans on the following conditions: the company would lend the seed, and the farmer would cultivate the soybeans under the supervision of the company's instructors. The farmer agreed to deliver the entire harvest of soybeans to the company for a price specified in the contract.



V. POPOVSKI

The price offered by the company was approximately 70 percent higher than the price of wheat prevailing at that time.

Soybeans were absolutely unknown at that time. During the first year only a few farmers signed

contracts with the company and started to experiment with their cultivation. The experiments proved successful, inasmuch as the yield of the soybean crops was equal to that of wheat, and their value was almost double that of wheat.

Steady Gain

The area devoted to soybeans grew steadily every year, especially in Bessarabia where agriculture was on a much higher level than in Romania. During the first year, a few hundred acres were planted with soybeans in northern Bessarabia, but by 1940 hundreds of thousands of acres were planted. Bessarabia offered very favorable conditions for the successful cultivation of soybeans, such as a climate with sufficient rainfall during the period of vegetation, and an abundance of comparatively cheap labor.

In the 7 years that I cultivated soybeans, I learned what were the best conditions for obtaining a good harvest of soybeans. The conditions are as follows:

1. *Place in the Rotation of Crops.* The soybean must follow crops which do not leave the land covered by a dense vegetation of weeds. After soybeans, the land must be planted with crops which will most benefit from the nitrogen accumulated by the roots of soybeans.

2. *The technique of soybean cultivation.* The density and the depth of the planting depend on the quality of the soil, the climate and work which can be performed during the vegetation. The experience which I acquired augmented the yield every

year. More particularly, in the third year, I obtained a yield of 3,000 kilos to the hectare, and determined the rotation of crops which would give the greatest income to farming.

The high amount of nitrogen left in the soil by soybeans, and the absence of weeds due to frequent tilling of the soybean crops, produced from 20 percent to 50 percent larger harvests of the crops which followed the soybeans.

Furthermore, the chaff and straw of soybeans proved to be a good feed for sheep; and the varieties of soybeans which retained the leaves could be fed to cattle.

In the farms where caracul sheep were bred, soybeans were planted very densely for hay, which in quality and quantity gave better results than other grass.

In a few years I realized the very unique possibilities offered by the introduction of soybeans in the rotation of crops. First, the possibility to cultivate them on almost any land. The best results were obtained on loamy and fertile soil. The quantity of nitrogen left by soybeans made it unnecessary to fertilize the soil with manure, which was costly and complicated. Soybeans could be planted on the same land for several years and the harvest became larger every year. At the

● *The author, one of the larger farmers in Bessarabia and a specialist in soybean production, was driven out of that country by the communists during the war. He is now employed as a factory worker in New York City.*

CONVEYING- ELEVATING AND TRANSMISSION MACHINERY

Large stocks carried in our warehouse for prompt shipment.
Our Engineering Department at your service at no extra cost.

Phone — Write or Wire Us

RIECHMAN-CROSBY CO.

Front at Beale, Memphis, Tenn.

DEALERS IN MILL-MACHINERY AND ELECTRICAL SUPPLIES

"Serving Industry since 1895"

same time the quality of the soil became better. That made it possible to change the rotation of crops so as to increase the overall income of farming.

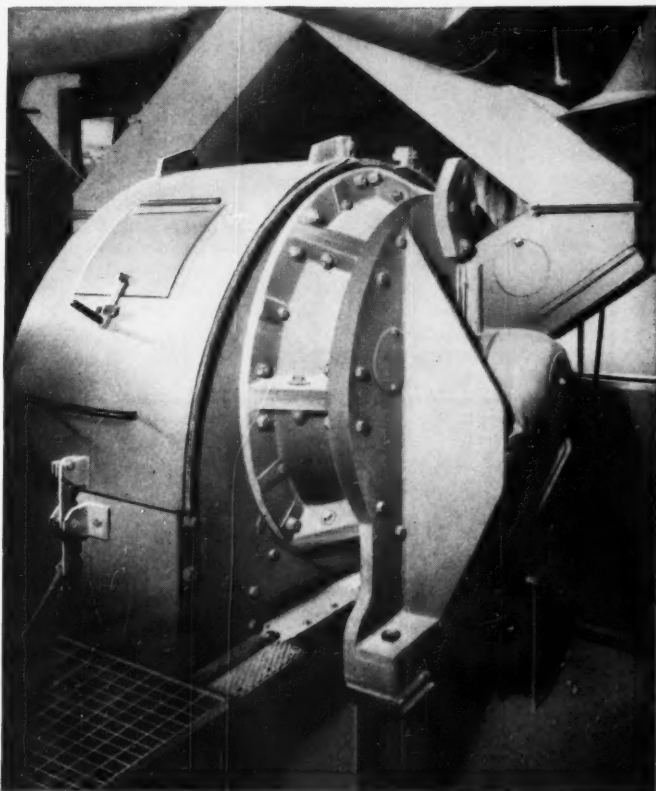
Improved Rotation

After the introduction of soybeans, the fields soon became clean and fertilized without any expense or work. Thus I was able to change the rotation of crops according to prevailing prices so as to increase the areas devoted to crops which promised the highest income. The steady demand for oleaginous grains on the European market made soybeans the main crop, and more and more land was devoted to their cultivation.

That was the situation before the war; but as a consequence of World War II, the entire picture was completely changed.

According to Bessarabian standards, we were fairly important farmers (250 acres). Twice we had to abandon our farms and flee before the advance of communists; once in 1940 and again in 1944. Otherwise we would have made a trip to Siberian concentration camps. Those who remained in 1940, in the hope that bolsheviks had changed, were arrested soon after the communists came, and then, a fortnight before the outbreak of war with Germany, 60,000 of them were transported to the USSR—the men to Siberia and the women and children to Kazakhstan. After that, none of the more important farmers remained in Bessarabia in 1944. Also, many smaller farmers fled, as they feared that they might be considered "kulaks" and sent to Siberia. "We, Russians," did not flee from Russia or Russians, but we fled the communists and the USSR.

After that I crossed Germany and had an opportunity to learn what an amazing number of products were manufactured from soybeans. The main product is comestible oil and there are almost 150 by-products. The oil cake is an excellent foodstuff for cattle and can also be used for manufacturing a very hard water repellent kind of plastic which may be used for parts of agricultural machinery, wheel rims, etc. The entire harvest of soybeans was sent to Germany as there were no plants in Romania which could use that raw material.



Today's Success

BASED ON YESTERDAY'S EXPERIENCE

Prater material reduction equipment available today is perfectly suited to your newest extraction processes whether you are working with soy beans, linseed, copra, peanuts or cotton seed. Experience... cooperative development... a thorough understanding of your processing problems... are the reasons behind the success of the Prater Dual-Screen Pulverizer.

Prater's perfectly uniform results with constant control over the quality of the grind, both of prime importance to your process, are the result of three stage reduction and screening through dual screens which cover over seventy percent of the area of the final sizing drum.

For details on Dual-Screen Pulverizers and how they will fit your reduction operation, write the Prater Industrial Products, 1527 South 55th Court, Chicago 50, Illinois.

PRATER PULVERIZERS

NORTON REPORTS ON EUROPEAN MARKET

Denmark, Holland and Belgium all offer a market for U. S. soybeans, according to reports of L. J. Norton, University of Illinois farm economist, who is in Europe at present for the U. S. Department of Agriculture.

Norton is making a study of market outlets for and competition with U. S. fats and oil under the Research and Marketing Act.

Denmark has been buying U. S. soybeans and will continue to buy

soybeans, meal and oil from the U. S. to the extent that ECA dollars will permit, Norton says.

"For the longtime viewpoint, however, purchases of American soybeans by Denmark will depend on the ability of the country to acquire dollars, and possible competition for the market from other areas.

"The Danes use soybean oil for three reasons:

"1—They need a soft oil, such as soybean, to use with a hard oil (co-

conut) in the manufacture of margarine. (This is also true in Holland and Belgium.)

"2—An estimated 750,000 tons of protein feeds a year is needed for the livestock industry, particularly in the feeding of dairy cows.

"3—Full time operation of the Danish oilseed crushing industry, with its annual capacity of about 400,000 tons, is important to Denmark's economic well being.

"If Denmark cannot obtain soybeans, the margarine industry likely will take other oils that will complement copra. There appears to be, however, a potential market for U. S. soybeans in Denmark in the coming year equivalent to a maximum of about 80,000 to 90,000 tons of cake. It would seem that at present Danish prices a considerable part of this likely would consist of soybeans."

The list price of soybean oil in barrels, delivered, at the time of Norton's visit in August was equivalent to 22.5 cents per pound. Coconut oil was quoted at about 17 cents per pound.

The Netherlands

The Netherlands is planning to buy small quantities of oilseeds in the U. S. in 1949-50, according to Norton. The purchases, to be made with ECA funds, will involve many soybeans, and some soybean oil.

With its extensive crushing industry, the procurement of oilseeds is of great importance to the Netherlands. There are 30 mills distributed throughout Holland. Recent oilseed imports have consisted chiefly of copra, flaxseed and soybeans.

The so-called "theoretical price" of crude soybean oil in the Netherlands was 13.6 cents per pound in August, and on soybean oil meal 4.5 cents. The theoretical value of a bushel of soybeans, based on meal and oil content, was \$3.55.

Belgium

Belgium has recently bought soybeans and soybean oil in the U. S. The Belgians reported to Dr. Norton that the quality of the beans was satisfactory but the imported oil, even when degummed, was dirty and of poorer quality than the domestic oil. There is no duty on beans but a 5 percent duty on crude oil and a 10 percent duty on refined oil.

Soybeans have been bought from the U. S. for October shipment at \$103 per ton, c.i.f. Antwerp, or about \$2.75 per bushel. More will be bought as needed. The total

ROLL GRINDING and CORRUGATING SPECIALISTS

Regrinding and Corrugating service for Oil Mill rolls of all sizes from 6" to 36" in diameter, and from 12" to 144" long. All types of Special Soybean and Oil Mill roll corrugations furnished on request.

New rolls supplied with journals made up to fit any type roller mill.

DESIGNED LAYOUTS

for Soybean Receiving and Storage, made to suit local requirements.

IN STOCK

for your convenience

Philadelphia Motoreducers, motors, motor bases and starting equipment. Morse Silent and Roller Chain drives, Reeves Variable Speed Drives, Screw Conveyor Equipment, including all types of fittings.

Elevator Buckets, elevator bolts, elevator belting, elevator accessories.

Steel elevator heads, boots, and legging made up to specifications on short notice.

DISTRIBUTORS for . . .

S. Howes Grain Cleaning Machinery, Kewanee Hydraulic Truck and Trailer Dumpers

ST. LOUIS MILL EQUIPMENT COMPANY

Milling Engineers and Millwrights

1025-35 N. Sixth Street

Central 4610 or 11

St. Louis 1, Missouri



IS YOUR ASSURANCE...



MM HARVESTORS ARE TOPS FOR SOY BEAN HARVESTING.

OF A BETTER, EASIER CROP THIS SEASON— *And Every Season!*

MM Modern Machines, Visionlined Tractors, and Power Units are *seasoned performers* in handling soy beans and all other crops... reducing your labor, increasing your profits, providing dependable, economical service from season to season, year after year! Quality MM farm implements assure better, faster, and more thorough work regardless of the task at hand. For all-round dependability, all through the year, MM is the choice of progressive farmers wherever the soil is tilled in the modern manner.

See Your Neighborly, Neighborhood MM Dealer for Complete Facts on the Complete Line of MM Visionlined Tractors, Modern Machines, and Power Units.

UNI-MATIC POWER

Gets More Work Done Every Hour

MM's new hydraulic control mechanism raises or lowers farm implements automatically, permits pre-selecting or changing tool depth or height of cut, utilizes tested safety features for both operator and machines and frees operator's hands and feet for greater safety. Control lever is easy to reach, simple to use. Uni-Matic Power reduces fatigue, labor, and drudgery. Optional on MM's R, Z, U, and G Visionlined Tractors.



MINNEAPOLIS-MOLINE
MINNEAPOLIS 1, MINNESOTA



MM HI-CLEARANCE PLOWS FOR SOY BEAN STUBBLE



MM DISC HARROWS PREPARE THE SOIL EXACTLY RIGHT FOR SOY BEANS.



MM POWER-FLOW SELF-PROPELLED HARVESTER, A MONEY MAKER IN SOY BEANS.



MM PLANTERS PUT YOUR SOY BEANS AND OTHER CROPS IN EVENLY, ACCURATELY AND AT UNIFORM DEPTH.



MM CULTIVATORS ON MM VISIONLINED TRACTORS KEEP SOY BEAN FIELDS CLEAN FOR MAXIMUM PRODUCTION.

might amount to 16,500 to 22,000 short tons from all sources. Offers of soybeans have been received from Brazil and Manchuria. If quality and terms prove satisfactory, these countries may share in the Belgian market, according to Norton.

Belgium has a considerable number of oil mills, but only six of any size. Only two of the larger extraction plants are handling soybeans. These have a capacity of about 300 tons a week. Soybean oil is exported and the price of the oil, both for domestic use and for export, is based on the cost of United States soybean oil.

— s b d —

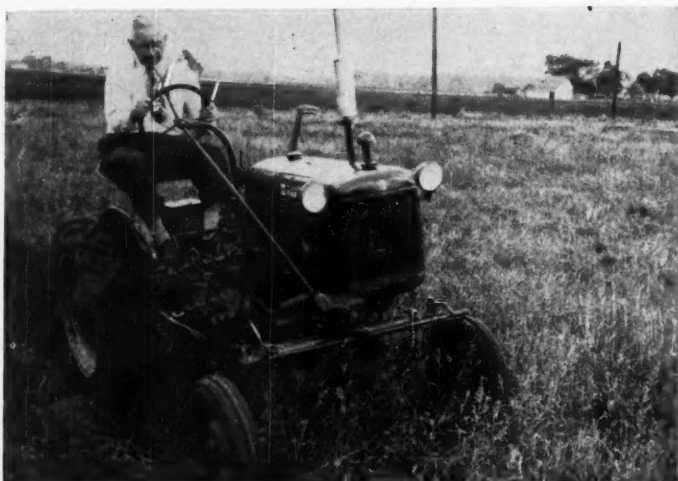
FLAX PRODUCTION

World flaxseed production in 1949, estimated at 133.3 million bushels is only 10 percent below last year's crop despite the sharp drop in North American output, reports Office of Foreign Agricultural Relations. Canada's drastic cut in acreage resulted in the greatest change in production prospect of the 1949-50 flaxseed season.

Acreage in the United States is down only slightly, and yield per acre is the lowest in several years, resulting in an outturn of less than 30 percent of the 1948 record harvest but one-third above the 1938-47 average. Mexico's flaxseed crop, particularly on the west coast, is smaller than anticipated.

Stocks of flaxseed and linseed oil (in terms of seed) in the important producing countries probably were well in excess of 100 million bushels on July 1, 1949. At least 90 percent of these stocks were in the Western Hemisphere.

Flaxseed production has increased moderately in other parts of the world except in Africa, where the current estimate is more than double that of 1948.



—Photo Courtesy Swift & Co. Oil Mill News

Manager S. D. Hollett, Swift & Co. Soybean Mill, Frankfort, Ind., plows around the soybean experimental plots prior to the annual Indiana Soybean Field Day.

ANNUAL INDIANA SOYBEAN FIELD DAY

Hoosier soybean producers had a chance to see latest production methods at the annual Indiana soybean field day at the Swift & Co. soybean test plots at Frankfort, Ind., Sept. 20.

The field day was co-sponsored by Purdue University under the direction of K. E. Beeson, Clinton County extension service and the Frankfort Implement and Truck Sales.

Arden Russell, Clinton County agent, was in charge of the morning program, which included a tour of the test plots and a trip through the Swift & Co. soybean mill.

Sam Hollett, manager of the Frankfort mill, was in charge of the afternoon program which included talks by Indiana's governor Henry F. Shricker, Leroy Hoffman, associate director of the Purdue University extension service, and Ward Calland, managing director of the National Soybean Crop Improvement Council.

— s b d —

Use of soy products by breweries totaled 506,125 pounds in June, reports Modern Brewery Age. Soy products were used at the rate of .05 pounds per barrel.

State 2-0350
Teletype CG283

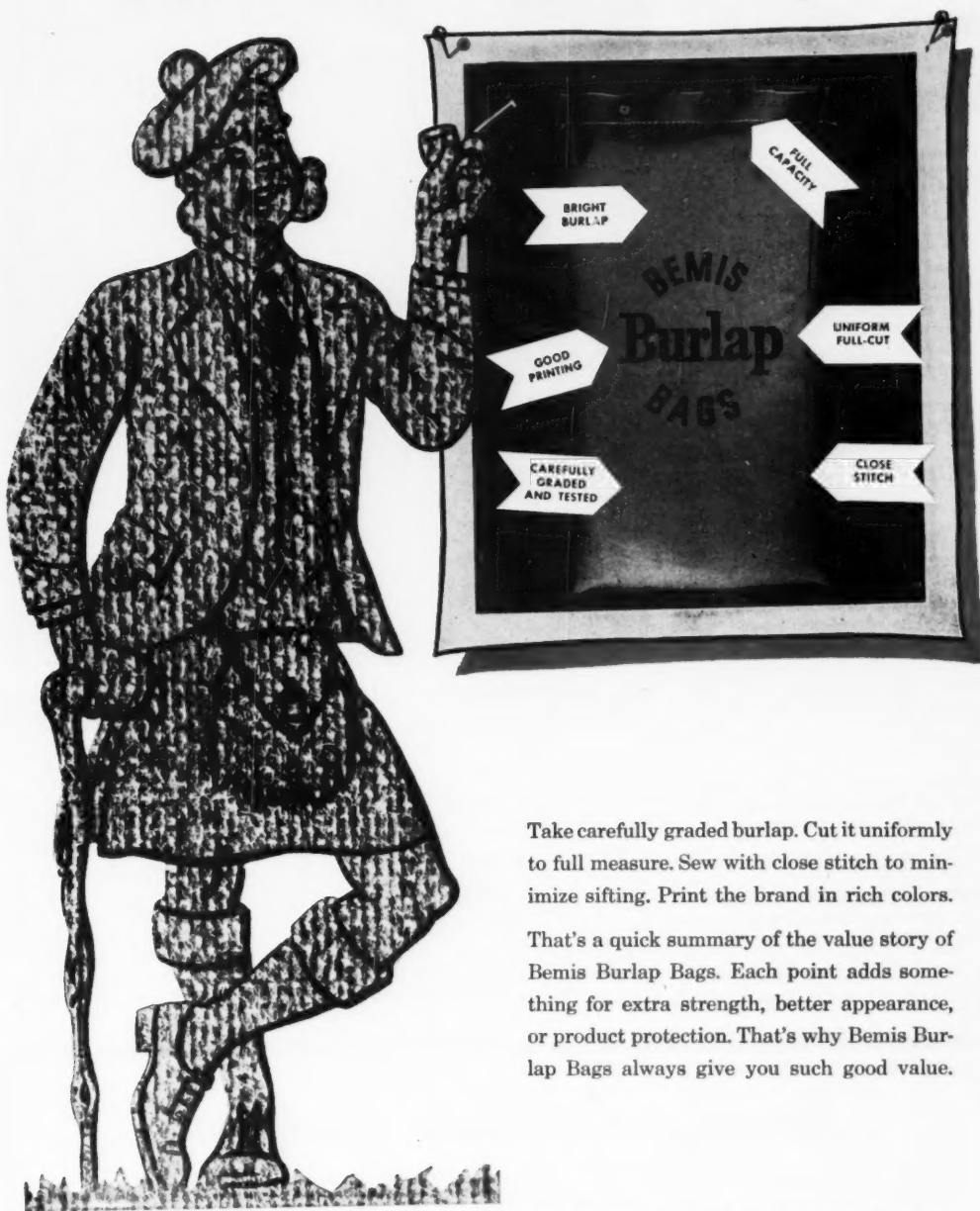
New York
Memphis
Dallas
San Francisco

Zimmerman Alderson Carr Company

Chicago

BROKERS TO THE SOYBEAN PROCESSOR

More for Your Money!



Take carefully graded burlap. Cut it uniformly to full measure. Sew with close stitch to minimize sifting. Print the brand in rich colors.

That's a quick summary of the value story of Bemis Burlap Bags. Each point adds something for extra strength, better appearance, or product protection. That's why Bemis Burlap Bags always give you such good value.

Bemis



Baltimore • Boise • Boston • Brooklyn • Buffalo • Charlotte
Chicago • Cleveland • Denver • Detroit • Houston • Louisville
Indianapolis • Jacksonville, Fla. • Kansas City • Los Angeles
Memphis • Minneapolis • New Orleans • New York City
Norfolk • Oklahoma City • Omaha • Phoenix • Pittsburgh
St. Louis • Salina • Salt Lake City • San Francisco • Seattle
Wichita

Soybean Festival at Portageville, Mo., Attracts Thousands

The 4-day second annual National Soybean Festival at Portageville, Mo., Oct. 12-15 attracted the largest crowd to that city in several years. It was estimated that 10,000 people watched the queens' float parade, which was a mile long.

The event was staged by the Portageville Junior Chamber of Commerce, whose ambition is to make the event a truly national affair. Joe T. Stryker was general chairman and Joseph A. DeLisle was co-chairman.

Carolyn Corlew, 16-year-old high school junior of Sikeston, Mo., won over 29 other contestants from five states to be named the second soybean queen. Miss Corlew is the daughter of Mr. and Mrs. Emory E. Corlew. She was sponsored by the Sikeston Jaycees and was recently named cotton queen at the VFW Cotton Festival in Sikeston.

Second and third place winners were Kay Grey, St. Louis, Mo., and Shirley Jane Landers, Dexter, Mo.

Prize money totaling \$1,000 went to the winners. Awards were presented by Hon. Walter H. Toberman, Missouri secretary of state.

Those who took part in the festival field day at the Judge T. A. Penman farm near Portageville saw



Newly crowned 1949 soybean queen, Carolyn Corlew, Sikeston, Mo., examines the savings bond awarded her while Master of Ceremonies Lee Mosby of Portageville Jaycees admires. You see at left Edith Harris, 1948 soybean queen of Ridgely, Tenn., and at right Joel Anne Hurl, national VFW queen, also of Ridgely.

every make of self-propelled combine in operation.

Speakers at the field day included Dr. W. C. Etheredge, head of the field crops department, University of Missouri, Columbia, Mo.; Mr. Langford, member of the field crops department, University of Missouri; Heartsill Banks, research director O.

H. Acom Farms, Wardell, Mo.; and "Pete" Renner, publicity director Scott County Milling Co., Sikeston, Mo.

Fifteen floats escorted by 10 high school bands carried the queen candidates through the streets of Portageville. Each float represented a different stage of soybean history, development and use in industry.

Sewrey - Gartside Company

SOYBEAN OIL BROKERS

F. A. Sewrey
W. T. Gartside
208 S. LaSalle St., Chicago 4

TELEPHONE:
Franklin 2-4732
TELETYPE:
CG 685

CARE PACKAGES USE SOY PRODUCTS

By BURL BRANT

Assistant Executive Director, Cooperative for American Remittances to Europe, Inc.

Since April 1948, when the Japanese Food Package for CARE was developed, two soybean products have been continuously included in those packages. They are soy sauce, known as "shoyu" and a bean curd preparation, known as "miso."

Miso

We were particularly fortunate in being able to interview Miss Tomiko Takagi of Tokyo, Japan. She is the correspondent for Fujin Club, Fujin Gaho, and Shufu to Seikatsu. Miss Takagi, who is in this country temporarily, is endeavoring to further the rehabilitation of her native land. She had prepared miso many times in Japan and explained the process thoroughly as practiced in her country.

Miso is used by the Japanese in the preparation of vegetable or fish soups, either of the thick or consommé varieties. The product originated in China and was later adopted by the Japanese.

It was interesting to learn that the miso manufactured in this country and shipped to Japan, was considered superior to the home prepared article. Our experience also is of interest. The miso included in the first lot of packages shipped to Japan, was packed in a pasteboard container and placed in the carton containing components packed in paper sacks or boxes. The miso continued to ferment, or age, as the Japanese term it, eventually bursting the containers and in some cases damaging other components in the packages. Immediately on receiving word of this defect in packaging, arrangements were made to have the original pasteboard container placed within a plastic bag and thereafter placed individually in a small corrugated carton, which was glued and taped. Miso was then packed in the separate carton containing canned goods, so that the danger of damage due to continued fermentation, was eliminated.

Shoyu

The country of origin of Shoyu is not definitely known, but it, like Miso, probably originated in China and was adopted by the Japanese. It is almost exclusively an Oriental

dish and is of considerable antiquity. The annual production of Shoyu in the U. S. is estimated at about one-half million gallons, produced by a limited number of concerns, most of which have limited production and are engaged in producing specialty foods.

Two processes are now in current use in the United States. The older and original method of manufacture, still used extensively in the

Orient, was one of fermentation. A more recent and modern process is hydrolysis, originally worked out in Japan and brought to the United States, where improvements in manufacturing technique have been developed. The product included by CARE in its packages, is attained by the use of both methods and a blending of the resulting products.

Shoyu is used by the Japanese in the preparation of soups and gravies, meat and fish dishes, and particularly in preparing any food containing rice.

The loans were based on beans!

THEY HAD BEEN FOR YEARS. Every time the candy-maker client of a certain bank thought the price of cocoa beans was attractive, he borrowed enough to stock up.

It was the system he'd always used—but only sometimes to advantage! If cocoa did go up after buying, he was in a strong competitive position . . . could sell his candy at a price based on lower costs. But when prices fell, he took a loss on his inventory—and found it extremely difficult to match his competitors' prices.

And that's just what happened late last year . . . what finally decided him to ask his bank if there wasn't some way he could reduce that inventory risk—operate on a more stable basis.

The bank was glad to help . . . suggested that he ask us about using the futures markets.

That's how we came to outline the simple program this manufacturer now follows.

We suggested that instead of buying months and months ahead, he should buy only enough cocoa for the next six weeks or so. At the same time, however, he should sell futures contracts for like amounts.

Then no matter what happened, he'd have a fair measure of protection. If cocoa prices fell several cents a pound before he needed more, he could buy his futures contracts back at a profit—still buy additional cocoa as cheaply as his competitors. If prices rose several cents a pound, he would lose on his futures contracts, but this loss could at least be partially offset by the increased price he and his competitors would charge for candy.

Such a program, we said, had to be carried on continuously . . . would greatly simplify his inventory problem—and make him an even better credit risk to his bank.

Of course, this is only one of the many ways we've managed to be of service to businessmen.

If you'd like to know whether we think a similar program might benefit you, we'll be glad to discuss the possibilities at any time. Or, if you prefer, just include the details in a letter to—

COMMODITY DIVISION

MERRILL LYNCH, PIERCE, FENNER & BEANE

70 PINE STREET

NEW YORK 5, N. Y.

Offices in 96 Cities



SOYBEAN FINANCING

WILLIAM H. BANKS WAREHOUSES, Inc., warehouse receipts on soybeans, oilmeal, and soybean oil, stored on your own premises, furnish you with needed working capital. Financing by means of field warehousing has been the accepted practice in the soybean industry for many years.

Wire or write or phone us today for full details and descriptive booklet.

WILLIAM H. BANKS WAREHOUSES, INC.

BONDED FIELD WAREHOUSEMAN
209 So. La Salle Street, Chicago, Ill.

GELSOY

(Continued from page 18)

peting with an expensive egg white product.

Preliminary experiments with Gelsoy indicate the possibility of preparing satisfactory formulas for its use in heat-sealing and remoistening adhesive application. Its utilization in these fields will depend upon specialty applications for which it may be developed.

Under a cooperative agreement with Allied Mills, Inc., Peoria, Ill., a small-scale plant for production of this product has been constructed where studies on the production of this new protein material are being made. Further investigation of its properties and potential industrial uses are continuing at the Northern Laboratory.

Summary

Gelsoy is a new, bland-tasting product which consists of the water-soluble fraction of undenatured soybean flakes which have been washed with ethanol. The alcohol washing improves both flavor and gelling properties. Gelsoy has properties resembling egg white and should find wide application in the food industry and as a specialty adhesive.

LITERATURE CITED

1. Beckel, A. C., and Smith, A. K. Alcohol extraction improves soy flour flavor and color. *Food Industries*, 16 (8): 71, 119 (1944).
2. Beckel, A. C., Belter, P. A., and Smith, A. K. The nondistillation alcohol extraction process for soybean oil. *J. Am. Oil Chem. Soc.*, 25, (1): 10-11 (1948).
3. Beckel, A. C., Belter, P. A., and Smith, A. K. Solvent effects on the products of soybean oil extraction. *J. Am. Oil Chem. Soc.*, 25 (1): 7-9 (1948).
4. Smith, Allan K., and Circle, Sidney J. Peptization of soybean proteins. *Ind. Eng. Chem.*, 30, 1414-18 (1938).
5. Beckel, A. C., Belter, P. A., and Smith, A. K. Laboratory study of continuous vegetable oil extraction. *Ind. Eng. Chem.*, 18, 56-58 (1946).

SUMMER ITCH CURE

At Columbia University, Drs. Charles A. Slanetz and Albert Scharf have been conducting some interesting, and effective experiments aimed toward the solution of the problem of recurrent summer itch. The experiments dealt with the effects of soybean phosphatides on the utilization of vitamin A and carotene.

Two percent soy lecithin was fed to dogs infected with summer itch or whelping eczema, with excellent results. The scientists explain that the introduction of the new factor, in helping the vitamin A metabolism, in turn has its effect on skin condition.

The factor is being incorporated in a new form of phosphatized cod liver oil which is being placed on the market.

— s b d —

NEW PROTEIN FIBRE

A new synthetic fiber made from cottonseed protein has been produced experimentally by government scientists at the Southern Regional Research Laboratory in New Orleans, the U. S. Department of Agriculture announces.

The cottonseed-protein fiber, says Dr. G. E. Hilbert, chief of the Bureau, may enable cotton plants to serve as a dual source of clothing and other textile products. It is about three-fourths as strong as wool when dry, feels soft to the hand, and has good dyeing characteristics. Natural color of the fiber is yellow or light orange. Its wet strength is about 40 percent of the dry strength. A public service patent was recently granted on the Laboratory's process for making this textile from cottonseed.

Get the Extra Wear that saves you money!

SCREW PRESSING EQUIPMENT CAN BE MADE TO LAST LONGER

Worms, Cones, Jaws, Rings and Integral Shafts will hold their size and sharp edges for a longer time when hard-surfaced with our tough hard alloys. This permits the machines to operate more continuously with maximum efficiency as well as eliminating down-time and high replacements costs.

Let us salvage your valuable worn-out equipment . . . We remove all cracked and chipped surfaces or flights before applying a new smooth solid hard-surface of Stellite. This method prevents hidden cracks . . . the cause of so much flight breakage.

Extra wear life can be added to other machine parts too . . . Send us sketches or blueprints of pump sleeves, pump shafts, valves, pulverizer hammers, rolls, knives, etc., for prompt quotations on abrasion or corrosion resistant surfacing.

METAL Hard-Surfacing COMPANY

Producers and Fabricators of Special Parts From Abrasion or Corrosion Resistant Metal Alloys.

1815 NO. LONG AVE. CHICAGO 39, ILLINOIS

TELEPHONE BERKSHIRE 7-8282

ANOTHER BIG SOYBEAN YEAR

The soybean harvest was practically completed in many northern areas Nov. 1 but was being delayed in some southern sections due to protracted wet weather.

Yields apparently average a little higher per acre but on fewer acres, as compared with 1943. Some very high yields are reported in some localities, up to 40 and even 50 bu. on individual fields.

There is weather damage due to excessive moisture in southeast Missouri, Arkansas and Illinois and Indiana. The situation is serious in Missouri and Arkansas. There was some drought damage in northern Iowa, Minnesota and North Dakota, and some sections report shatter losses particularly on early harvested soybeans.

Apparently there will be less farm storage than in 1943 though more than earlier expected as farmers are holding for a better price. Handling facilities for moving the crop have in the main been adequate, but the storage and boxcar situation was critical in some spots at the height of the movement.

There are reports from Nebraska, Iowa and Illinois that farmers intend to increase soybean acreage in 1950.

A production of 211,198,000 bushels of soybeans is indicated according to the Oct. 1 crop report of the U. S. Department of Agriculture. This is a substantial increase over the 204 million bushels forecast Sept. 1, but is still about 4 percent below the record 220 million bushel crop produced last year. The indicated U. S. yield of 21.8 bushels is the highest of record. The yield last year also was high, 21.4 bushels, compared with the average of 18.7 bushels per acre.

The 26 bushel per acre yield in Illinois is exceptionally high—2 bushels above last year and 1½ bushels above the previous record set in 1939.

Reports of Soybean Digest correspondents follow:

ARKANSAS

L. M. Humphrey, R. L. Dortch Seed Farms, Scott, for Little Rock area (Oct. 24): This has been a very good bean year and yields are very good—30-40 bu. not uncommon. Per acre yields about 20% above 1943. Total about 30% lower due to reduced acreage in favor

of cotton. About 50% of crop harvested. Heavy and persistent rains past week may damage last half of crop. Beans grading very good. Very few going under government loan so far. No change in farm storage from past years.

Jake Hartz, Jr., Jacob Hartz Seed Co., Inc., Stuttgart, for southeast and south central (Oct. 25): 35% of crop harvested. Per acre yield 10-15% higher than 1943. Total

yield 10% less. Damage from excessive rain in October. Seed situation may be serious. Rain stopped all operations. Harvest not far enough advanced to determine amount of farm storage. Early sales brought good price, market break forcing beans into storage. None under government loan so far, but it is being talked.

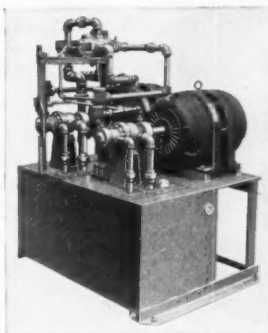
FLORIDA

E. N. Stephens, county agent, Pensacola, for Escambia County (Oct. 26): Crop 50% harvested. Total yield 15% larger than 1943. Beans



Kewanee HYDRAULIC DUMPER

- Unloads all sizes of Trucks and Tractor Trailers.
- Sizes—40'x10', 45'x10', and 50'x10' Platforms. Other sizes on special order.
- Capacities up to 100,000 lbs.
- Scale and Non-Scale Types.
- Easy, trouble-free operation. Simple, positive, one-man Controls.
- Telescoping Hydraulic Cylinders require only a shallow pit. Hydraulically operated Wheel Stops.



Powerful TWIN Hydraulic Unit

UNLOADS all sizes of Trucks and big Tractor Trailers in a "jiffy." Takes all the time-stealing hard work out of unloading, eliminates waiting time and keeps trucks on the go. In less than 2 minutes they're unloaded and on their way. You save time, work, money!

Powerful TWIN Hydraulic Unit. Raises to full height in 41 seconds, lowers in 20 seconds. Maximum safety because of "oil-locked" hydraulic control and cushioned lowering. No danger of accidents.

Easy operation and simple controls . . . one man operates the Dumper and Wheel Stops from one location where he can see and control the complete unloading operation. Greatly reduces labor costs.

Evidence of KEWANEE performance and economy is overwhelming. It is substantiated by successive repeat orders from leading firms who have installed them at all their plants.

One elevator reports unloading more than 1,000,000 bu. of grain in one month's operation with a two man crew, averaging over 100 trucks each working day.

The KEWANEE Dumper will widen the area you can serve and increase your volume. Truckers appreciate "no long waiting in line" and they tell others. It attracts new customers and builds your business. Find out *today* how KEWANEE will solve your unloading problems.

Write TODAY for Bulletin HD-4

KEWANEE MACHINERY & CONVEYOR CO., Kewanee, Illinois

grading very good. None stored on farms. 5% going under government loan.

ILLINOIS

Walter W. McLaughlin, Citizens National Bank, Decatur, for Decatur (Oct. 24): 90% harvested. Yield 85 to 90% of 1948. We had one farm all planted to Hawkeye beans that averaged 47.6 bu. per acre. This land had been limed, phosphated and clovered. Some areas suffered with drouth. Beans were smaller than usual. More soybeans in farm storage than past years.

J. E. Johnson, Champaign for Champaign and adjoining counties (Oct. 25): Crop 98% harvested. A very few fields so weedy could not be combined until frost. Per acre yield at least 3 bu. higher than 1948. Looks like 27 bu. average for 1949 crop for territory. Fewer acres, so expect total to be no higher than 1948. Very dry during harvest which caused heavy harvest loss. Amount of farm storage 50% less than 1948, but more than anticipated at early harvest time. Very small amount under government loan as yet. Any marked decline in price would start the loans. Elevator storage has been available. Some points

were delayed due to lack of cars. Not serious.

Robert W. Weitzer, Valley Farms Co., Carrollton, for west central (Oct. 24): Crop 95% harvested on Valley Farms, 65% harvested in area. Yield running 5 to 8 bu. higher than 1948. Total bushels about same. Not much damage on early beans but yield will be cut on beans still in field due to rainfall. Beans grading No. 2 with moisture about 12%. More beans stored on farm than normally. Probably 15% going under government loan.

Gilbert F. Smith, Mahomet, for east central (Oct. 25): 90% of crop harvested locally. Where fields are wet are way behind. Total yield in area short of 1948 because of shortage of acres. Heavy shattering of beans. Early cut fields are green with perfect stand for another crop. Our area stores very few beans. Most operators are tenants with no space. Very few will be sealed.

Russell S. Davis, Clayton, for west central (Oct. 26): Very few fields remain to be harvested. Yields exceptionally high this year. Would not be surprised if average above 30 bu. per acre. A lot of fields made

35 to 40 bu., and a few reported up to 47. For this soil type, that is a lot of beans. Total yield lower than 1948 due to reduced acreage. Beans grading very well, even dry enough for farm storage. More beans stored on farm than usual. Enough to cause a 3-cent raise in price offered by buyers toward end of harvest.

W. D. Scott, Urbana (Oct. 26): About 75% harvested. Per acre yield 1 to 2 bu. above 1948 average yield of 24 bu. Total yield above 1948 total. Practically no damage to crop from any cause until high rainfall in October retarded harvest and will probably reduce yield of beans not harvested. Quality has been very good. Amount in farm storage similar to 1948.

Frank S. Garwood & Sons, Stonington, for south central (Oct. 26): Crop 95% harvested. Per acre yield about 5 bu. better than 1948. Total yield about 10% less due to less acreage. Slight brown stem rot damage but less than usual. Beans grading better than common. Slightly more in farm storage than past years. Less weeds than normal with harvest being completed earlier than we ever remember.



Here's *NEWS* for SOYBEAN PROCESSORS

Greater Efficiency — Greater Profit with the Carter Millerator

Already applied to soybean cleaning, the Carter Millerator now has NEW improvements to give greater efficiency than ever before! The Millerator does a refined scalping, removing material larger in diameter than the beans being handled, and much of the material substantially longer. A second screen removes small seeds and sand. Light foreign materials are removed by a controlled aspiration. The second screen is sometimes used for removal of splits.

The Carter Millerator is valuable for the screening and aspiration of soybeans before processing. Get the facts on this machine today!

Write for brand new folder giving facts and details on this outstanding machine.

HART-CARTER COMPANY

660 Nineteenth Avenue N.E.

Minneapolis 13, Minnesota

INDIANA

K. E. Beeson, Indiana Corn Growers Association, West LaFayette (Oct. 24): 90% of central Indiana beans combined. Some heavy producing areas in southern Indiana report many beans in field. Per acre yield 1 bu. above 1943. Total yield 4% less. "Frog-eye" damage to Gibsons in southwestern. Early harvested beans grade excellent. Some weather damage now. Slightly more farm storage than past years.

Peter J. Lux, State PMA, Indianapolis (Oct. 24): 75% harvested. Per acre yield 10% above 1943, total 5% higher. Too much moisture. Beans grading very good. About the same amount in farm storage as past years. 5% more under government loan.

Ersel Walley, Fort Wayne, for northwest Ohio and northeast Indiana (Oct. 23): Crop 95% harvested. Per acre yield slightly higher than average. Total yield about 10% less than 1943. Early beans hurt by too much rain. Late beans excellent. Beans grading practically all No. 2. Lots of beans going into elevator storage. More going into farm storage than in past years.

J. B. Edmondson, Danville, for south central (Oct. 23): Crop 95% harvested. Per acre yield 5-10% higher than 1943, both upland and in black soil. Total yield about same or possibly a bit higher. More purpling of seed coats than I have ever seen, detracting from quality. Beans grading practically all No. 2, except those combined after prolonged wet weather. About same amount of beans in farm storage as past years. Lack of bean-proof bins prompts the farmer to take the easy way out and sell the beans. Not over 5% going under government loan. Margin was not great enough to attract many beans.

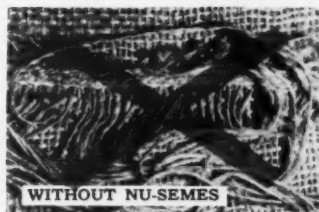
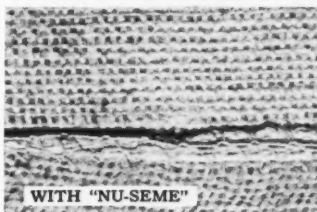
IOWA

Howard L. Roach, Plainfield, for northeast (Oct. 24): Crop 100% harvested. Per acre yield 15% under 1943, total 30% less. Beans grading No. 2. About the same percentage in farm storage as in past years. 15% going under government loan. Loss of corn due to borer damage is making many farmers think more of soybeans as crop. Present indications are for increased acreage for 1950.

Leslie M. Carl, U. S. Department of Agriculture, Des Moines (Oct. 24): Crop 90% harvested by Oct. 22. Total yield 27.4 million bu. compared with 35.4 million bu. in 1943.



Mills throughout the middle west are saving up to \$1 a ton in sacking costs by using 'NU-SEME' bags . . . an exclusive, patented Western Burlap Bag Co. product. And, at the same time, they're getting bags that look as good as brand new AND ARE JUST AS STRONG! . . . with their regular colorful imprint!



WHAT ARE 'NU-SEME'S'?

'NU-SEME'S' are completely re-conditioned bags, individually selected from the best used bags obtainable. After thorough cleaning and reprocessing, each bag is turned inside out and the rough seam (shown in upper right photo) re-sewn and completely covered by WESTERN'S patented NU-SEME machines . . . making a bag that looks like new and with EVEN STRONGER seams!

NU-SEME bags can be colorfully imprinted just like any brand new bag, yet you still save up to \$1 a ton when compared to the cost of new bags. There's no loss of quality either, for only the very highest grade used bags are selected for the NU-SEME process.

Free Samples

Write today for a free NU-SEME bag and full information. See for yourself how you can start cutting production costs without cutting quality.



Western Burlap Bag Co.

1101 WEST 38th STREET
CHICAGO 9, ILLINOIS

SEND FOR A FREE SAMPLE

Gentlemen:

Please send us a sample 'NU-SEME' Bag. Show us how we can cut our sacking costs.

Mill _____

Address _____

Name _____

We are now using ☐ New ☐ 10 oz. ☐ 8 oz.
☐ Used ☐ 10 oz. ☐ 8 oz.

354,000 bu. stored on farms Oct. 1 as compared with 438,000 bu. same date a year ago.

Otis J. Luttschwager, Buckeye for central (Oct. 25): Crop 99% harvested. Per acre yield same as 1943, total yield 30% down. Beans grading excellent. 50% in farm storage. 40% going under government loan.

Fred Hawthorn, Castana for western (Oct. 25): Crop 100% harvested. Per acre yield 80% of 1943. Some drought damage. Qual-

ity good. Beans dry. Less in farm storage than past years.

KANSAS

E. A. Cleavinger, extension division, Kansas State College, Manhattan, for eastern (Oct. 24): Crop 80% harvested. Some drought damage, no frost damage, damage from diseases slight. In general 1949 season good. 90% of beans going off the farms.

H. L. Collins, federal-state agricultural statistician, Topeka (Oct. 27): Crop about three-fourths har-

vested. Recent heavy rains caused some delay. Indicated production 1949 2.9 million bushels compared with 2.5 million bushels in 1943. Slight amount of grasshopper and webworm damage.

KENTUCKY

H. F. Bryant, statistician in charge, Louisville (Oct. 14): Some early beans turning out rather disappointing yields. It may be that total production will not reach that expected from earlier reports.

MICHIGAN

James H. Quick, Newport for southeast (Oct. 24): Crop 75% harvested. Per acre yield 10% higher than 1943. State yield about same due to drop in seed areas. Beans grading very good. About 20% more in farm storage than 1943.

MINNESOTA

Howard E. Grow, Farmer Seed & Nursery Co., Faribault, for southeast (Oct. 26): Crop practically all harvested. Per acre yield slightly less than 1943 due to dry growing season. Bean size very uneven because of heat and drought. Considerably less cracked beans than 1943.

R. E. Hodgson, Waseca, for southeast (Oct. 26): Crop 95% harvested. Per acre yield 2 bu. higher than 1943. Some reduction from drought. Early ripening caused some loss from shattering on areas harvested late. Beans are smaller but mostly grading No. 2. Elevators having trouble getting cars. On the whole a successful year for soybean growers. Corn borer damage will increase interest in soybeans for 1950.

John W. Evans, Montevideo, for southwest (Oct. 26): Crop 90% harvested. Per acre yield 20% less than 1943. Total yield 25% less. Drought biggest factor in lower yield. Beans grading No. 1. 13% moisture. More beans in farm storage than past years. Considerable will go under government loan.

MISSOURI

A. F. Stephens, general agricultural agent, Gulf Mobile & Ohio Railroad, St. Louis, for northeast Missouri and Illinois (Oct. 24): Crop 75% harvested. Per acre yield 10 to 15% above 1943, total yield about equal. Quality good. Slight increase in farm storage. Both elevator storage and boxcar supply has been critical.

Harry A. Plattner, Malta Bend, for central (Oct. 24): Crop 90 to 95% harvested. Small increase in per acre yield over last year. Some small fields reported up to 50 bu.



Purvis F. Tabor, shown in his office at Sullivan, Ill., has been active in the grain business for 20 years. He is president of Tabor Grain & Feed Co., which merchandises grain, soybeans and feed ingredients. The two firms operate eight country stations in central Illinois. Tabor is a consistent reader of the SOYBEAN DIGEST and a regular advertiser.

DIGEST READERS ARE FIRST

SOYBEAN DIGEST readers are first to try new improvements — to add new equipment and build new storage. This year elevator operators — DIGEST READERS — added millions of bushels to storage capacity and thousands of dollars worth of equipment.

Grain men are outnumbered only by producers as SOYBEAN DIGEST readers.

WHY? Soybeans today rank only below wheat and corn in dollar value and bushels handled by the grain trade.* From the 1948 crop, 142 million bushels valued at 322 million dollars passed through elevators. The great majority of grain dealers in the big bean states of Illinois, Iowa, Indiana and Ohio, and a large number in Missouri and Minnesota are handlers of soybeans.

You can concentrate your sales message on the grain trade leaders by advertising regularly in the SOYBEAN DIGEST.

*As shown by reports of grain inspectors and BAE reports of farm crops sold.



SOYBEAN DIGEST circulation is concentrated in the leading soybean states of Illinois, Iowa, Indiana, Ohio, Missouri, Minnesota and Arkansas. It reaches into 44 of the 48 states, Washington, D. C., and most foreign countries where soybeans are grown. The DIGEST is read by producers, processors, manufacturers and others interested in soybeans as a crop and an industry, as well as by grain handlers.

Address Inquiries to the
SOYBEAN DIGEST, Hudson, Iowa

Early plantings average 25 to 30 bu. Late planting 10 to 15 bu. Total yield about 10% increase over 1948. Most all beans grade No. 1 and 2. Most beans stored in public elevators and sold at time of harvest.

John E. Brown, Cypress Land Farms Co., Jaywye, for New Madrid County (Oct. 24): About one-third harvested with ground so wet only self-propelled rice equipped combines and a few others getting through. Yield about same as 1948 on part that is out. Beans being damaged by too much wet weather. 14% moisture beans are dry with some running up to 20% and more. 100% more of early beans being stored on farm. Late beans too wet to store. Boxcars were short but situation has improved.

E. M. Poirot, Golden City, for southwest (Oct. 25): Crop 98% harvested. Per acre yield a fraction lower than 1948. Total yield higher. Slight drought damage. Beans grading very good. About same in farm storage as in past.

NEBRASKA

Harry E. Wiyel, Fremont Cake & Meal Co., Fremont, for eastern (Oct. 25): Crop 95% harvested. Average yield will be about 25 bu. per acre. We have had a very good harvest with yields of 30 bu. being quite common, and occasionally fields run 35 to 40 bu. per acre. One grower who had 160 acres in beans had 30 bu. average. Farmers all signify their intentions to increase their bean acreage next year. Almost all beans grading No. 2 or better. Very few beans kept on farms other than seed requirements.

H. Wolfe, extension agronomist, Lincoln (Oct. 24): Crop 95% harvested. Per acre yield little changed from 1948. Total 1949 yield will be about two-thirds of the 1943 total. Beans grading very good, better than 1948. Most beans not being held in storage. Less than last year going under government loan.

NORTH DAKOTA

C. J. Heltemes, Fargo (Oct. 24): Crop 100% harvested. Soybean acreage increased sharply this year but weather too hot and dry in late July and all of August. Per acre yield 10 bu. compared with 13 bu. in 1948. Total yield 120,000 bu. in 1949; 91,000 in 1948. This is one of our minor crops that gives promise of expanding in acreage.

OHIO

G. G. McLroy, Irwin, for west central (Oct. 24): Crop 99% harvested. Per acre yield 15% higher than 1948, total 10% higher. Beans grading better than ever before. Many lots of beans showing test weight of 58 lbs. as combined. Minimum of splits. Test weight generally 2 lbs. per bu. more than average year. Possibly fewer beans in farm storage than past years. Large portion of crop contracted before harvest and moved directly from local elevator to processor.

Paul C. Hughes, field service director American Soybean Association, for Van Wert south to Urbana (Oct. 29): Crop 98 to 99.5% harvested. Average per acre yield 6 to 10 bu. more than 1948. Total yield 20% higher with a reduction in acreage. Beans grading No. 2 or

better. Many report best quality yet. Fewer splits than normal. Beans not hard this year. This was Ohio's best crop for yield and quality.

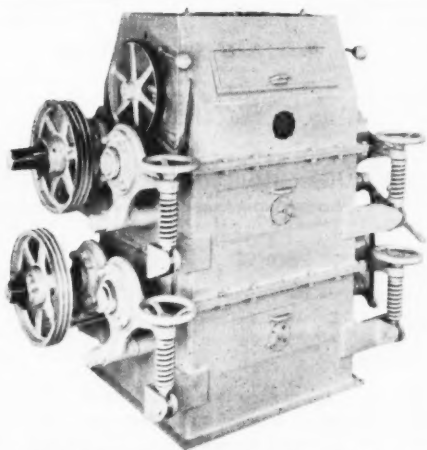
D. G. Wing, Mechanicsburg, for west central (Oct. 25): Crop 100% harvested. Per acre yield 135% of 1948. Our section had the largest average yield in history. 30-40 bu. not uncommon. We made a 33-bu. average on 350 acres of beans. Lincolns were highest in yield. Crop was out early. Weeds only bad damage factor. Amount of beans in farm storage about same as past years. Very small amount going under government loan.

D. F. Beard, department of agronomy, Ohio State University (Oct. 28): 50% or more of crop harvested. Per acre yield higher than 1948. Total yield as much or more. Less going into farm storage than in past years.

ONTARIO

Ontario Department of Agriculture, official report: Total yield for 1949 is 2,019,400 bu. compared with 1,824,000 bu. in 1948. Total acreage in 1949 was 87,300; in 1948 94,000. Per acre yield in 1949 was 23 bu.; in 1948, 19.

R. H. Peck, River Canard, Ontario, Canada, for southwestern Ontario (Oct. 26): Crop about 75% harvested. Average increase of 5 bu. per acre compared with 1948. This year's average estimated at 23 bu. with some exceptional fields up to 40 bu. There should be about 40% over all increase in production. A small amount of drought and disease, both in small areas. Beans



TWO PAIR HIGH ROLLER MILLS MODEL 49

Efficient, Modern Designed
Cracking Mills

- Streamlined
- Heavy Duty Roller Bearings
- Positive Adjustment Controls
- Proven in the Field

This quality Roller Mill is available in sizes 9 x 18
to 10 x 42.

Write for further information
to

BARNARD & LEAS MFG. CO., INC., CEDAR RAPIDS, IOWA, USA

Come to Headquarters for
Cottonseed Meal Soybean Meal
Peanut Meal
Cake and Pellets Cottonseed Hulls

Domestic and Export

THE BRODE' CORPORATION

MEMPHIS, TENN.

Phone LD 271 38-2544

Teletype ME 260

On request, we will mail you our frequent market bulletins

D. J. GUILLORY

L. PAT LOBBAN

Guillory Sales Company

BROKERS IN

SOYA BEAN OIL AND MEAL

COTTON EXCHANGE BLDG.

Phone 5-5346

L.D. 451-446

Memphis, Tenn.

Members: New York Produce Exchange
Memphis Merchants Exchange

USED OIL MILL EQUIPMENT

one part or complete plant

Expellers all sizes and makes. Various size Filter Presses.
Hydraulic Cake Presses. Hot and cold Cake Cutters.
Seed Cleaning Equipment. Flaking rolls 34 to 60".
Stack cookers or toasters from one high to six high—54-78-85" diameter. Attrition mills. Hydraulic pumps. Accumulators.
Conveyors. Boilers. Engines. Motors.

Let Us Know Your Needs.

If it is used in the oil mill we have it.

V. A. LESSOR & COMPANY

PHONE 4-3332
P. O. BOX 108

CABLE ADDRESS—VALCO
FORT WORTH, TEXAS

THE FACT STILL
REMAINS THAT
SUPERIOR ELEVATOR
CUPS

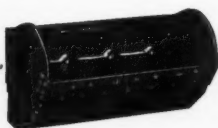
"DP" - "OK" - "CC" - "V"
are MADE STRONGER
will LAST LONGER

have
GREATER CAPACITY
and will operate more efficiently at less cost than
other elevator cups.

write to

K. I. WILLIS CORPORATION
MOLINE, ILLINOIS

for names of distributors and analysis form No. 20



Our **SERVICE** *to you*
Includes . . .

Roll Grinding and Corrugating

Replacement Rolls

Bucket Elevators and Drives

Cyclone Metal Dust Collectors

Rubber - Cotton - Leather Belting

"V" Belt and all types of Chain Drives

Gears Cut to Order

Spiral Conveyors, Boxes and Fittings

Elevator Cups

Special machinery designed and built for the job.

PURITAN MANUFACTURING CO.

1931 North 11th Street

OMAHA, NEBRASKA

GREUTKER INCORPORATED

819 Chamber of Commerce Bldg.

BUFFALO 2, NEW YORK

Specializing in
Soybean Meal for the Mixing Trade



OFFICE PHONES:

MOhawk 7766-7-8

Teletype BU 209

CALL:

Frank Greutker

Jack Bowling

Chris Greutker

Burt Newell

MOhawk 6055

MOhawk 6032

MOhawk 2177

MOhawk 7766

grading very good. Good harvesting weather has produced a low moisture content, some as low as 12%. On the average this year's crop is very good and the price quite satisfactory which may increase next year's acreage.

VIRGINIA

Henry M. Taylor, department of agriculture, Richmond (Oct. 24): Crop about 23% harvested. Slight increase in yield over 1948. Total yield 1.9 million bu. compared with 1.7 million bu. in 1948. Many farmers lack adequate storage facilities.

WEST VIRGINIA

R. J. Friant and Collins Veatch, Morgantown, (Oct. 24): Crop 95% harvested. 10% increase in yield over 1948. Beans grading very good because of late fall. 10% increase in farm storage as compared with past years.

WISCONSIN

Geo. M. Briggs, College of Agriculture, Madison (Oct. 24): Crop 80% harvested. Yield better than 1948. Quite a few yields over 25 bu. reported. A few about 30 bu., even of early varieties in favorable soils. Hawkeyes proving very popular in southern and southwestern area. 10% of crop immature due to dry weather early in season resulting in late planting. Beans all grading very good, No. 2 and better. Many 12% moisture and less. Only small amount in farm storage.

SOYBEANS FOR BEANS

State	Yield per acre		Production	
	1948	1949	1948	1949
	Bushels		Thousand Bushels	
Ohio	20.5	22.0	18,614	18,964
Ind.	21.5	22.5	31,196	30,038
Ill.	24.0	26.0	78,504	80,808
Mich.	17.5	20.0	1,138	1,200
Wis.	13.0	15.5	195	310
Minn.	18.5	17.5	15,614	12,758
Iowa	23.0	21.0	35,443	27,405
Mo.	20.0	21.0	15,900	16,695
Kans.	15.0	14.0	2,505	2,982
Va.	16.5	17.0	1,749	1,989
N. C.	13.5	13.0	3,564	3,484
Ky.	19.0	19.0	2,299	2,584
Tenn.	20.0	20.0	1,340	1,280
Miss.	18.0	15.5	2,394	1,798
Ark.	19.5	18.5	5,148	4,699
Other States	15.4	13.8	4,598	4,294
U. S.	21.4	21.8	226,201	211,108

— s b d —

COURSE IN PAINT

President William E. Hood, Birmingham, Ala., of the Southern Paint and Varnish Production Club has announced completion of arrangements between that organization and officials of the University of Alabama for a course on paint technology at the University in the season ahead.

The South is the source of many of the raw materials that go into the paint, varnish and lacquer industries.

NEW FROZEN DESSERT

A new market for cottonseed oil has been discovered by Cabell, Inc., large Dallas and Northeast Texas dairy, in the form of "dZert," a product that tastes and looks like ice cream, but is made with 25-cents-a-pound vegetable fats instead of 75 cents-a-pound butter fat.

Cabell's believe "dZert" is the answer for price-conscious families who may be cutting back on their

ice cream purchases because they have felt that they could not afford it.

Cabell's isn't trying to peddle its new dessert as "ice cream." The pint package, which fits in a refrigerator tray, is labeled "dZert—frozen dairy dessert." The container lists the ingredients—milk, cream, sugar, fresh fruit, vegetable fat and flavoring. The milk and cream supply the small amount of butterfat found in "dZert."

Swift & Company
"Service Stations"
in the Soybean Belt
 (Each arrow marks the location of a Swift soybean mill)

- We buy soybeans (friendly service—prompt returns)
- We operate soybean mills (quality oil and oil meal products)
- We sell soybean oil meal (properly processed—quality-controlled)

Throughout the soybean belt, Swift & Company offers reliable services to soybean growers and users of soybean oil meal.

We buy soybeans in truck or carload lots. We have quality soybean oil meal for feed manufacturers and feed mixers—for farmers and feeders of livestock and poultry.

If you have any interest in the soybean industry you'll find that it pays to deal with Swift & Company Soybean Mills. Our services, products and "know-how" are available to you.

Swift & Company Soybean Mills

- Cairo, Ill.
- Des Moines, Iowa
- Fostoria, Ohio
- Frankfort, Ind.
- Champaign, Ill.
- Blytheville, Ark.



Publications

FAO Report

The Food and Agriculture Organization of the United Nations has announced issuance of a Fats and Oils Bulletin, another in the Organization's series of commodity studies published from time to time for the information of member governments and other interested groups.

The new bulletin contains an appraisal of the current world fats and oils situation as compared with the immediate prewar position, along with an analysis of the longer-term trends. A comprehensive statistical appendix gives estimates of current world production compared with 1943, 1947, and prewar; detailed statistics of international trade during the same periods; and consumption levels in 1943 compared with those before the war.

The bulletin shows the extent to which most importing countries are still consuming fats and oils at well below prewar totals. The report also brings out the substantial surpluses of oilseeds, fats and oils

which are now developing in the Western Hemisphere and other hard currency regions, due also to foreign exchange difficulties in the soft currency countries, which absorb the bulk of world imports.

The Fats and Oils Bulletin is obtainable at FAO sales agencies in various parts of the world at (US) 50 cents.

Soybean Oil Paints

Use of about 5 percent of calcium oxide in outside white paints on cedar panels on test fences improves the coatings of these paints, workers at the Northern Regional Research Laboratory have found.

This is especially true when the oil vehicles are either non-break or alkali-refined soybean oil.

Use of calcium oxide in soybean oil paints improves them in the following ways:

1—They dry more rapidly to a hard coating that is free from residual and/or after-tack.

2—They do not yellow in dark, shaded exposures.

3—They have greatly improved reflectance qualities.

4—They have greatly reduced dirt retention.

5—They dry flat or without appreciable gloss, and stay uniform in appearance in service, whether in shaded or sunlit areas.

6—They have increased resistance to deep checking, cracking, and alligatoring—the defects that make satisfactory repainting difficult.

CALCIUM OXIDE-SOYBEAN OIL PAINTS HAVING REDUCED TACK AND INCREASED DURABILITY. By A. J. Lewis, J. C. Cowan and N. C. Schieltz, Northern Regional Research Laboratory, Peoria, Ill. *Journal of the American Oil Chemists Society*, Chicago, Ill., Sept. 1949.

Trypsin Inhibitor

It has been well established that heat treatment or adding methionine will improve the nutritive value of raw soybeans. It is believed that the poor growth-promoting value of raw soybeans may be due to the trypsin inhibitor which retards the release of methionine during digestion.

The Quartermaster Food and Container Institute of the Armed Forces at Chicago has investigated the effect of soybean trypsin inhibitor on the enzymatic release of amino acids from autoclaved soybean meal.

Results indicate the release of methionine from raw soybean oil meal was not retarded more by the trypsin inhibitor than by other amino acids.

The antitryptic factor does not fully account for the difference in the release of amino acids from raw and auto-claved soybean oil meal. Alteration of soy protein due to heat may retard or aid the release of amino acids.

Peptic inactivation of the trypsin inhibitor covers up differences in digestibility and release of methionine between raw and autoclaved soybean oil meal.

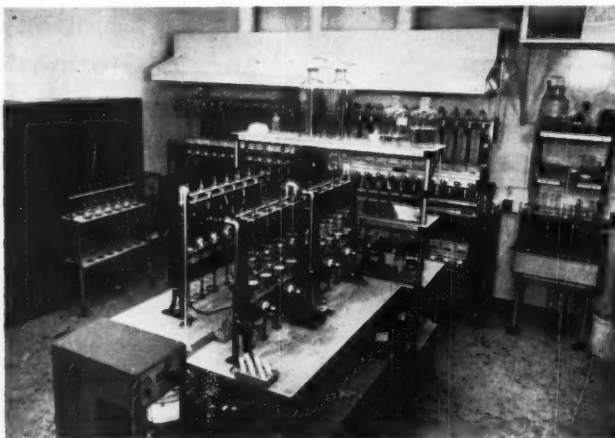
THE EFFECT OF THE SOYBEAN TRYPSIN INHIBITOR ON THE ENZYMATIC RELEASE OF AMINO ACIDS FROM AUTOCLAVED SOYBEAN MEAL. By I. E. Liener and H. L. Fevold, Quartermaster Food and Container Institute for the Armed Forces, Chicago. *Arch. Biochem.*, April 1949.

Processor Year Book

Year Book and Trading Rules for the year 1949-50 has been issued by

SOYBEAN DIGEST

ADVERTISEMENT



JOHN W. ESHELMAN AND SONS, Lancaster, Pennsylvania, feed manufacturers for over a century, use "Labconco" equipment throughout their modern laboratory. Pictured above is Eshelman's Goldfish fat extraction apparatus (foreground) and "Labconco" Kjeldahl unit (background) for swift, accurate protein determinations. For more than 20 years, Laboratory Construction Co. has specialized in laboratory equipment for the feed and soybean industries. Whatever you need, equipment for protein, fat or fiber determinations . . . specialized carts and tables . . . acid-proof sinks — get in touch with Laboratory Construction Co. Whether building a new laboratory or just modernizing, bring your problems direct to the manufacturer for sure satisfaction. Write today for free literature — LABORATORY CONSTRUCTION COMPANY, 1113 Holmes, Kansas City, Missouri.

→
Here is a typical
installation—
a St. Regis Filling
Machine and St. Regis
Paper Bags in actual
operation at the
Hazlehurst Oil Mill
& Fertilizer Co.,
Hazlehurst, Miss.



TESTS PROVE MULTIWALLS CUT COSTS

Four More St. Regis Systems Being Installed!

Rigid tests made in actual operation prove that St. Regis Packaging Systems: cut bag costs (cheaper than fabric bags); reduce labor costs (really a one-man operation); prevent siftage and retention. Right now St. Regis is installing systems in the plants of four *more* leading producers in the South.

St. Regis Multiwalls Eliminate Siftage and Retention Losses St. Regis Packaging is proving its value to the cottonseed and soybean oil meal industries—bringing added advantages to both producers and their customers. No more siftage and retention losses so common when these meals are packed in burlap bags.

For complete information on how this *new* and *modern* system can streamline your packaging, cut packaging costs, write, wire or phone your nearest St. Regis Sales Office. A St. Regis representative will gladly give you full details, without any obligation on your part.



SALES SUBSIDIARY OF ST. REGIS PAPER COMPANY

ST. REGIS
SALES CORPORATION

230 PARK AVENUE • NEW YORK 17, N. Y.

Allentown, Pa. • Atlanta
Baltimore • Birmingham
Boston • Chicago
Cleveland • Denver
Detroit • Houston
Kansas City, Mo. • Los Angeles
Louisville • Minneapolis
New York • Ocala, Fla.
San Francisco • Seattle

In Canada:
St. Regis Paper Co. (Can.) Ltd.
Montreal • Hamilton • Vancouver

YOU GET PROTECTION WHEN YOU BUY MULTIWALLS

the National Soybean Processors Association, Chicago, Ill.

Included are trading rules on soybean oil meal and oil as amended Sept. 1 of this year, and official methods of analysis for the meal and oil.

Officers, directors and committees for the coming year are included, as well as the membership list of the Association.

YEAR BOOK AND TRADING RULES 1949-1950 NATIONAL SOYBEAN PROCESSORS ASSOCIATION. Price \$1. 3318 Board of Trade Bldg., Chicago 4, Ill.

Oilseed Patents

Following are abstracts of patents of the Southern Regional Research Laboratory, New Orleans 19, La. They are available for license on a royalty-free, non-exclusive basis. Further information on the patents will be furnished on request by the Laboratory.

Pat. No. 2,376,568. **TREATMENT OF OILSEEDS**, Aaron M. Altschul and Melvin L. Karon, patented May 22, 1945. Describes a process whereby the normal pH of oilseeds is increased by chemical treatment as a means of improving the storage properties of the seed.

Although use of ammonia is preferable, the same result may be accomplished by the use of other volatile bases which produce the required adjustment of the pH, as for example, morpholine.

Pat. No. 2,376,852. **TREATMENT OF OILSEEDS**, Aaron M. Altschul

and Melvin L. Karon, patented May 22, 1945. Describes a process for treating oilseeds with a volatile base, preferably ammonia, to raise the pH to not less than 8.0 as a means of improving the storage properties of the seed.

As a result of such treatment, cottonseed with a moisture content as high as 20 percent has been successfully stored for more than 8 months without developing an appreciable amount of free fatty acid. The seeds did not heat at all, and the color of the resulting oil was lighter than the original color of the untreated seed.

Treatment should precede extraction of the oil by at least a week. In addition to inhibiting the natural deteriorative processes in the stored seed, the treatment also successfully prevents the growth of molds on moist cottonseed.

Pat. No. 2,421,113. **VEGETABLE PROTEIN HYDRATES**, Raymond S. Burnett and Earl J. Roberts, patented May 27, 1947. Relates to a process for preparing fluid, comparatively stable and relatively clear vegetable protein hydrates. The term "hydrate" is used rather than the term "dispersion" because the compositions appear as homogeneous (one-phase) solutions of water in protein while dispersions are considered to be heterogeneous (two-phase) mixtures of protein in water.

The process consists of forming a mixture of water and protein, the quantity of water being about 50 percent of the hydrate (enough to completely hydrate the protein but

not more than the amount which the protein molecules will bind), and the hydrate having a pH of about 7.0.

Pat. No. 2,462,933. **PROCESS FOR MANUFACTURING ARTIFICIAL FIBER FROM PROTEINS CONTAINED IN COTTON SEED**, Jett C. Arthur, Jr., Melvin L. Karon, Adrian F. Pomes, and Aaron M. Altschul, patented March 1, 1949.

Cottonseed protein, as it is normally prepared from cottonseed meal, is obtained in such a form and contains such cross-linkages that preparation from it of dispersions suitable for spinning into fibers is impossible. This patent, however, describes a process by which the cottonseed protein is first treated with acid in such a manner as partially to denature it, to break the cross-linkages which interfere with the dispersion, and to transform the protein into a form from which dispersions can be made.

Another result of this treatment is to change the structure of the protein into a more linear form so that its dispersions become tacky and stringy and generally more suitable for fiber production. Such dispersions were successfully spun, stretched, and hardened to produce fiber suitable for textiles and other purposes.

— s b d —

TO CENTRAL SOYA



J. S. Hanfsee was recently appointed advertising manager for Central Soya Co., Inc. He comes from New York City where he has been operating his own consulting advertising service in the New York area. He will be in charge of creating the over all advertising program for Central Soya. Superior Advertising, Inc., will continue to serve as the firm's advertising agency.



Filter Cloths

- Die-cut with exact precision.
- Delivered, as pictured, to any schedule.
- No shrinkage. No large roll goods inventory.
- Less shutdown time.

Send dimensions or press plate template and material specifications for free sample cloth.

FILTER *ff* FABRICS

Incorporated

704 Marion Bldg.

Cleveland 13, Ohio

MODEL CAST ALUMINUM SEED AND GRAIN CONVEYOR

Your MILLS were the PROVING GROUNDS for this NEW and IMPROVED SEPSCO SEED and GRAIN CONVEYOR.

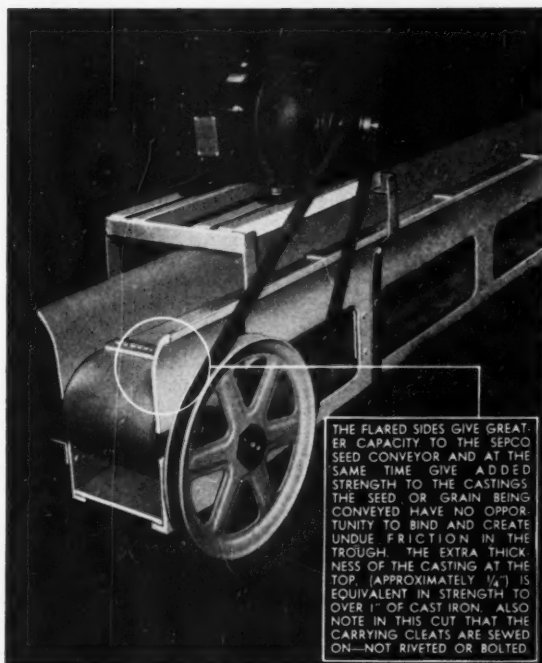
Here is a Seed and Grain Conveyor that has been designed by a large cross section of the Processors and handlers of Cotton Seed, Corn, Soybeans and Peanuts in the South, Southeast and Southwest.

In this Seed and Grain Conveyor we have developed a machine that will save many, many hours of labor—a machine that is very light but very durable in construction, and will actually handle more seed than more expensive and heavier machines designed for the same purpose.

SPECIFICATIONS ON STANDARD MODEL

Sides are made of 3/16" Cast Aluminum Alloy up to the flare and are increased to 1/4" at top of flare. Trough is 6" wide at bottom and flared to 9" at top—and is 4 1/4" deep. The over-all height of sides is 10". Bottoms of trough are made of permanent outdoor specially treated Marine Plywood of 1/2" thickness. Pulleys are made of centrifugally cast aluminum alloy. All bearings on Conveyor, as well as motor are ball bearing. Hopper is made of 16 gauge steel sheet 24" wide at back, 9 1/2" high and 4' long. Conveyor belt is made of oil resisting Duck and Neoprene that is specially built for our Conveyors. The Conveying Cleats are made of Duck and Neoprene and are sewed on. The over-all length of the Conveyor is 18 feet. Standard model is equipped with 1/2 H.P. Electric Motor with 25 feet of extension cord. The total weight less motor is 170 pounds, with motor 215 pounds.

Note: Above specifications cover our Standard Model. We can furnish this conveyor in lengths of 13 1/2 ft., 18 ft., 22 1/2 ft., 27 ft., 31 1/2 ft., 36 ft., 40 1/2 ft., and 45 ft., and in widths of 6", 8", 10", 12", 14", 16" and 18". We can also equip the conveyor with any h.p. motor or gasoline engine desired, or 20 feet of flexible steel shafting for taking power direct from truck on which seed is hauled.



Conveyor suspended will support two bales of cotton



Complete literature will be gladly furnished upon request. Write today.

DISTRIBUTORS:

Houston Belting & Supply Co.—Houston, Texas
Well Machinery & Supply Co.—Ft. Worth, Texas
Chickasha Gin & Mill Supplies—Chickasha, Okla.
Mill & Mine Supply Co.—Little Rock, Ark.
Gullet Gin Co.—Amite, La.
Lubbock Hardware & Supply Co.—Lubbock, Texas
Hasky Manufacturing Co., 509 Vandalia St., St. Paul, Minn.
Pacific Mill & Mine Supply Co., Fresno, Calif.

Miss. Foundry & Machine Co.—Jackson, Miss.
Taylor Oil & Peanut Mills—Moultrie, Ga.
Farmers & Ginners Cotton Oil Co.—Birmingham, Ala.
Hays Supply Co.—Memphis, Tenn.
Briggs-Weaver Machinery Co.—Dallas, Texas
Mill City Equipment Co.—Minneapolis, Minn.
C. A. Skogman & Associates, 1818 Thomas Ave. N., Minneapolis, Minn.

Manufactured by

SOUTHEASTERN PRODUCTS CORPORATION
P. O. BOX 2310
BIRMINGHAM, ALABAMA

NOVEMBER, 1949

51

GRITS and FLAKES...

FROM THE WORLD OF SOY

Paul A. Goeser of Swift & Co.'s research laboratory, and A. E. Jones, Swift vice president in charge of sales and advertising, were members of a panel on industry problems at the Oct. 12-15 meeting of the National Association of Food Chains in Chicago.

John A. Larigan has been appointed sales representative of the St. Regis Paper Co., Multiwall bag division at Minneapolis, Minn. Announcement was also made of the appointment of Howard C. Bryan as field engineer, representing the company in the Minnesota area.

Story of the Texas Research Foundation's investigation of new oilseeds at Renner, Texas in the August issue of the Humble Farm Family, house organ of the Humble Oil and Refining Co., featured Dr. Robert Kalton, associate agronomist, and his experiments with soybeans in the Texas Blacklands.

Halls Grain Co., Halls, Tenn., is improving its grain handling facilities by installing new ear corn storage, corn sheller and five tanks which will bring total capacity to 65,000 bushels.

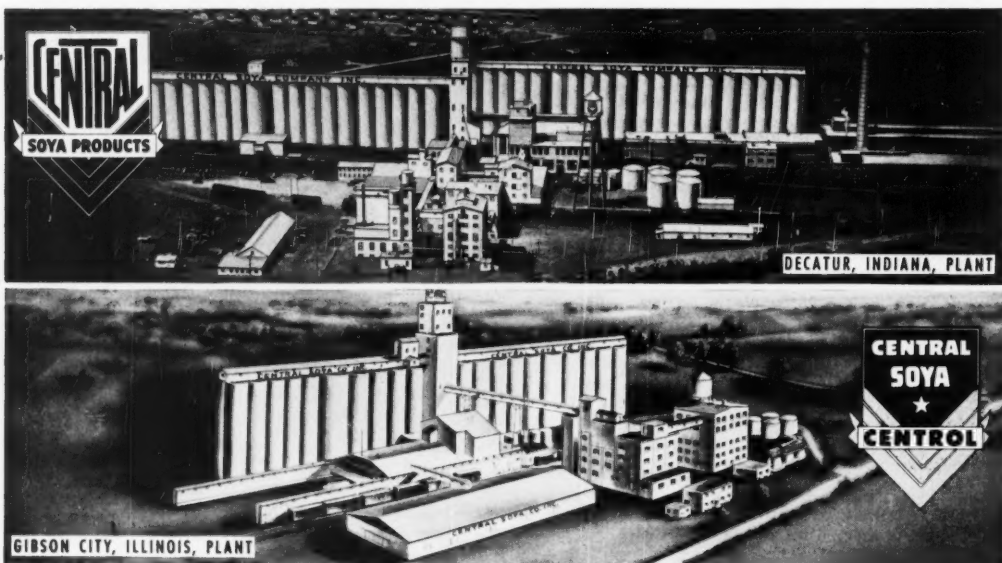
George W. Martin has joined the national commodity division of Merrill Lynch, Pierce, Fenner & Beane, brokers in securities and commodities. He will be in charge of the Chicago section of the vegetable oils and allied products department.

Equipment for the chemical processing industries is described in a new 20-page buying guide released by the Allis-Chalmers Manufacturing Co., 1159A S. 70th St., Milwaukee, Wis. Write for bulletin 25B6177D.

TO NEW POST

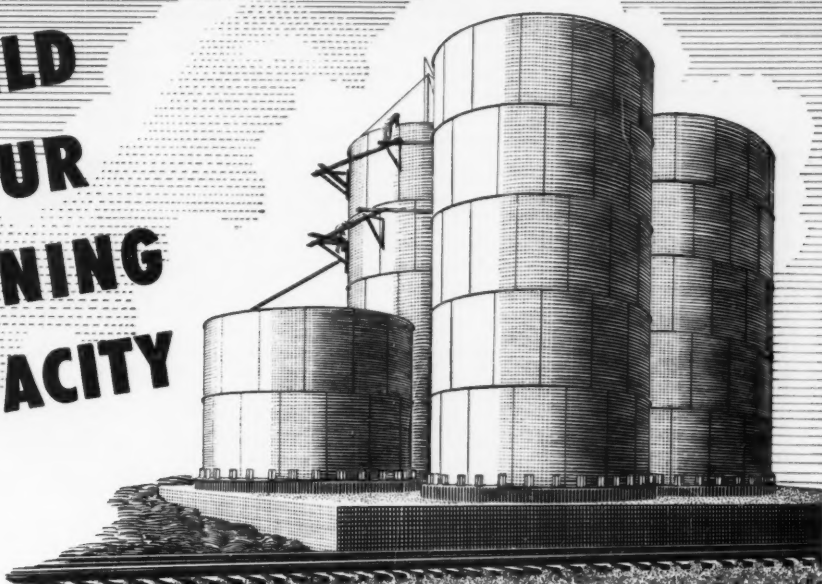


Chemical plants division of Blaw-Knox Co., Pittsburgh, Pa., announces that H. L. Barnebey will have charge of sales promotion, advertising and the investigation of new processes for the division. This is a promotion for Barnebey to a newly created position and transfers him from one of the manufacturing divisions of the company, where he was manager of the process equipment department.



Serving American Industry
THE CENTRAL SOYA COMPANY, INC.
 (EXECUTIVE OFFICE)
 FORT WAYNE, INDIANA

BUILD YOUR EARNING CAPACITY



With a Minimum Investment of Time and Money...

- Expand the storage and handling capacity of your plant with Butler Steel Grain Tanks—the quick, economical way to increase the earning capacity of your elevator, mill or processing plant. Butler Grain Tanks pay their own way. Their initial cost and maintenance are low, their service life is long. Fire-safe, rat-proof and weather-tight, these Butler Tanks provide safe grain storage.
- Now is the time to plan for next year's crops and to be ready for more business. Butler can give prompt delivery. Labor is more available at this time and your erection costs will be at a minimum. Write, phone or wire today for complete information on construction and equipment of these money-saving, money-earning Butler Steel Grain Tanks.

BUTLER MANUFACTURING COMPANY

Kansas City, Mo. • Galesburg, Ill. • Richmond, Calif. • Minneapolis, Minn.



For prompt handling, address all inquiries to:
 17461 E. 13th St., Kansas City 3, Mo.
 961 6th Ave., S.E., Minneapolis 14, Minn.
 Dept. UU Shipyard #2, P.O. Box 1072, Richmond, Calif.

NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

Dr. F. L. Thomsen resigned his position as director of the marketing research branch, Production and Marketing Administration of the U. S. Department of Agriculture recently to return to private industry as a marketing consultant.

J. C. Trost & Co., Philo, Ill., has added a 30,000-bushel concrete tank to its elevator.

E. W. Allison has been elected secretary-treasurer of Detrex Corp., Detroit 32, Mich., manufacturers of industrial equipment and solvents. He has been with the company since 1941 in the legal department and will retain his supervision over the legal and personnel departments.

A new 8-page illustrated bulletin has been released by Dings Magnetic Separator Co., 4740 W. Electric Ave., Milwaukee 14, Wis. Copies of the catalog No. C-5000A, are available on request.

Picture of D. W. L. Burlison, head of the department of agronomy of the University of Illinois, College of Agriculture, Urbana, Ill., appeared on the front cover of the September issue of Chemurgic Digest. The issue contained a story of Dr. Burlison's achievements as a friend of chemurgy.

Carl C. Cundy, and William J. Gurke of Detroit have been added to the package goods sales staff of the A. E. Staley Manufacturing Co. with work in the Washington, D. C. and Ohio areas respectively.

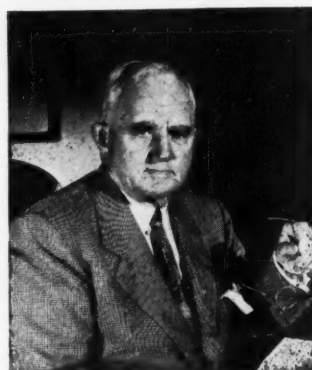
For the third consecutive year, Black, Sivalls and Bryson, Inc., Kansas City 6, Mo., has won the bronze "Oscar of Industry" presented by Financial World for the best annual report of the materials handling equipment industry.

A new bulletin, Soybean News, is being published by the National Soybean Crop Improvement Council sponsored by the National Soybean Processors Association for the purpose of relating pertinent, factual information about soybeans—the crop and the things produced from soybeans.

H. L. Forbes Co., Detroit, has been appointed sales representative for the chemical division of General Mills, Inc., for the state of Michigan. S. S. Skelton Co., Cleveland will represent the company for northeast Ohio.

Walter S. Going, vice president of the Continental Gin Co., Birmingham, Ala., died recently of a heart attack. He had been in ill health for some time.

INTRODUCED SOYS



—Photo Courtesy Forbes Magazine
L. C. SPRAGUE

Major credit for introducing soybeans into the four-state area served by the Minneapolis & St. Louis Railroad is accorded to Lucian C. Sprague in an article, "Fare Enough," in Aug. 15 Forbes Magazine.

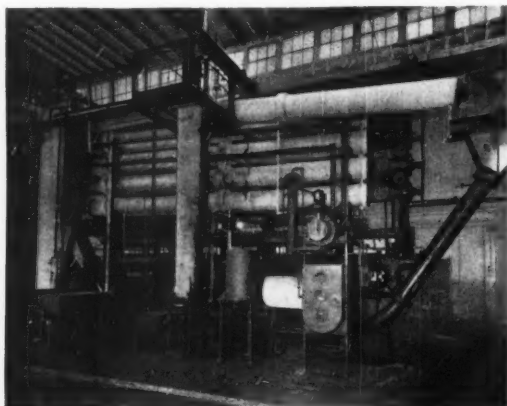
Sprague took over the M. & St. L. as receiver in 1934 and was able to end the receivership by 1943 by smart railroading.

Soybeans today rate No. 4 among crops moved by the M. & St. L. Quoting Forbes: "Personally interested in agriculture, Sprague has also been largely responsible for the introduction of soybeans into the four-state area served by his road—a drought-resisting crop for a periodically drought-stricken region.

"In 1936 he had a special agricultural demonstration car equipped

FOR SAFE, PROFITABLE EXTRACTION

...A PROVED AND TESTED NON-FLAMMABLE SOLVENT OIL EXTRACTION PLANT



● Here is a small (twenty-five ton), efficient extraction system especially developed for use in smaller operations. This plant, thoroughly tested and proved, uses non-flammable Trichlorethylene solvent and is manufactured under exclusive patent rights of Iowa State College. Operating data on this system, including figures on consumption and yield, will be provided on request.

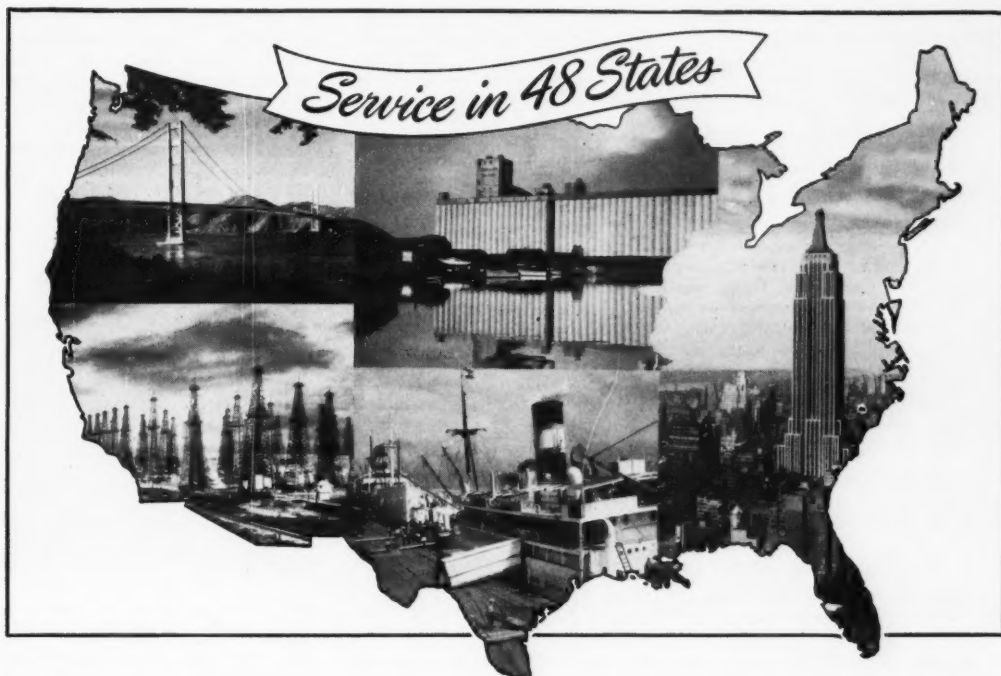
You are invited to see this plant in actual operation.

Write for additional information.



CROWN IRON WORKS CO.

1267 Tyler St. N. E. • Minneapolis 13, Minn.



Your extraction solvent problem is important!

If you have an extraction solvent problem, it's important—important because it is yours.

We understand this because for 25 years we have made your solvent problems our business.

During this time Amsco has developed an almost unlimited line of extraction solvents, one of which may be exactly what you need. (If it isn't, Amsco technicians will develop a product especially for you.)

Here are four reasons why so many users of extraction solvents specify Amsco:

1. Amsco's high, fast rate of extraction.
2. Low solvent losses—due to close distillation, high initial boiling point, low dry point.
3. Freedom from objectionable residue and odor.
4. Amsco's famous "Service that goes beyond the sale."

Also, Amsco's products are available for prompt delivery anywhere in the United States.



**AMERICAN MINERAL
SPIRITS COMPANY**
Chicago, New York

LOS ANGELES • PHILADELPHIA • DETROIT • CLEVELAND • MILWAUKEE • INDIANAPOLIS
CINCINNATI • HOUSTON • NEW ORLEANS • ATLANTA • SAN FRANCISCO • BUFFALO
BOSTON • PROVIDENCE • CORPUS CHRISTI • TORONTO • MONTREAL

If you have a solvent problem, why not let us help you solve it? For complete information on Amsco Extraction Solvents, mail the coupon today.

THE MOST COMPLETE LINE OF PETROLEUM BASE SOLVENTS AVAILABLE

Amsco products constitute the widest variety of petroleum solvents available. Every one of them, from oldest to newest, must measure up to the company's 25-year reputation—a reputation for uniform high quality, for prompt service, and for an eagerness to develop new products to meet industry's ever-changing demands.

American Mineral Spirits Company, Dept. SD-6
230 North Michigan Avenue
Chicago 1, Illinois

Please send information on the complete line of Amsco petroleum-base solvents to:

Name.....Position.....

Company.....

Street Address.....

City and State.....

(Samples sent on request)

Crown Iron Works Co., Minneapolis, Minn., has issued a descriptive leaflet containing a flow sheet of its prefabricated solvent extraction plant that is easily installed in regions where soybeans are grown. The plant was first developed by Drs. O. R. Sweeney and L. K. Arnold, research professors of chemical engineering at Iowa State College.

* * * *

Picture of Edward J. Dies, chairman of the board of Soy Flour Association, Washington, D. C., appeared on the front cover of the October issue of Chemurgic Digest with a story inside of his accomplishments as a friend of chemurgy.

* * * *

G. W. McCullough, vice president and general manager of Phillips Chemical Co., Bartlesville, Okla., was a guest speaker at the recent fourth annual short course on instrumentation for the process industries, at Texas Agricultural and Mechanical College, College Station, Texas.

* * * *

Bemis Bro. Bag Co., 408 Pine Street, St. Louis 2, Mo., has issued a 16-page booklet illustrating and describing more than 40 products and special services available through the firm.

* * * *

Richard F. Uhlmann, president of the Chicago Board of Trade has announced that the board of directors has elected Myron F. Ratcliffe of Bache & Co. to membership in the Board of Trade.

* * * *

E. Staley, jr., president of the Staley Manufacturing Co., Decatur, Ill., has been decorated by King Haakon VII for his services as first head of the economic cooperation administration mission to Norway.

* * * *

Deland Farmers Cooperative Grain Co., Deland, Ill., added 12,000 bushels storage for soybeans, Manager Harry Carrell has announced.

to show farmers how to diversify their crops. Feature attraction: soybeans. For 16 days he ran the car up and down his lines, making stops at every hamlet, touting the display to some 6,000 farmers.

"With characteristic thoroughness he bought large quantities of soybean seed for distribution along the road's right-of-way."

— s b d —

STORAGE FOR PLANTERS



This is additional storage being erected for Planters Oil Mill, Tunica, Miss., by Pidgeon-Thomas Iron Co., Memphis, Tenn. Its capacity is 5,000 tons of soybeans and 3,500 tons of cottonseed. C. E. White is manager of the mill.

Want to get better quality beans?

Want to reduce processing costs?

Want to make more profit in 1950?

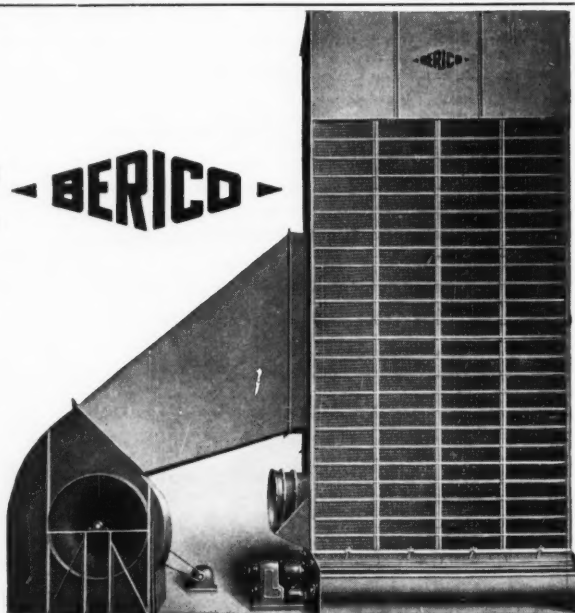
**Dry and cool your Soybeans with
a Columnar Grain Drier by...**

BERICO

Simplicity of method, design, construction, installation and operation are the key-notes to the rapid, coast-to-coast demand for **BERICO**—and a 20-year success-record assures your complete and lasting satisfaction for years ahead.

Beans moving down dual free-flowing, unrestricted columns are subjected to tremendous quantities of low-temperature air, forced through special high carbon steel woven wire screens forming the columns. No spillage; no back-up; every bean completely and constantly exposed to moisture-removing air blasts. Separate fan permits cooling immediately before beans are discharged from Drier columns.

Factory pre-fabricated for rapid and easy assembly in field, warehouse or elevator. Models for every capacity-requirement. FREE Data Sheets, blue-prints and complete details on request; no obligation at any time.



H. M. SHANZER CO.
COMPLETE MILL SERVICE
85 BLUXOME ST., SAN FRANCISCO 7, CALIFORNIA

SOYBEAN DIGEST

A report from the 2nd largest customer for soybean oils— *Nutritious* **Margarine**

Modern U. S. pronunciation—Mar'jar-in

Your customer's product, margarine, is now used in 84% of American homes.*

And, margarine has a constantly expanding market. More and more people are buying margarine regularly.

This is good news for you, if you produce or process soybean oils.

With your second largest customer so solidly entrenched in the vast majority of homes, you can look to the margarine industry as a steadily continuing outlet for your product.

The national advertising of the Margarine Association over the past years has played an

important part in building this market for you. Brand advertising today is continuing to influence the public swing to nutritious margarine.

These ads are *your* ads in a very real way. Look for them. Show them to your friends. And when you can, put in a good word for your good customer, margarine!

*Consumption 1948 and Industrial Surveys, Inc., data

*National Association
of Margarine Manufacturers*

Munsey Building

Washington 4, D. C.

WASHINGTON Digest

1950 SUPPORT. First official reactions following passage of the new farm bill indicate that it will have little effect on the level of price support for soybeans grown in 1950.

With a few important exceptions, the Administration's general policy on storable crops appears to be: Keep 1950 dollars-and-cents price floors approximately in line with 90 percent of the old parity formula, if funds are available.

Under the new law, soybeans will take the "modern" parity formula, which includes labor costs. It raises parity for soybeans about 26 cents a bushel.

Support for soybeans is not mandatory. The Secretary of Agriculture has power to set them anywhere from nothing to 90 percent of the new parity.

Congress did direct that supports for soybeans, and other "storable non-basic" crops, be set, if feasible and if funds are available, within a range of 75 to 90 percent of parity according to a sliding scale based on supply and demand. This is the practical range of support for 1950.

However, the best estimate now is that the 1950 crop will be supported pretty close to the 1949 loan figure—around \$2 to \$2.05 a bushel compared with a \$2.11 average for this season.

This would be 80 to 85 percent of the new soybean parity. It would compare with an estimated 1950 loan for corn of about \$1.35 a bushel.

Corn, wheat and other "basic" crops are guaranteed 90 percent of

parity support next year; not less than 80 percent of parity in 1951; not less than 75 percent of parity from 1952 on.

For the next four crops, corn and wheat can use the most favorable of the two parity formulas, the old or new. Starting with the 1954 crop, they switch over to the new formula, which pulls grains down.

Projecting price floors this far ahead is academic, for the new farm law has merely postponed the fight over price support legislation. The Administration, and Southern leaders, are determined to put through a new bill within the next 2 years.

Peanuts will continue to have a 90 percent support next year—at about the same rate as now. Cottonseed support if any, probably will be set at 75 percent of the new parity—or around \$49 a ton, which is only 50 cents lower than this year.

The new parity will increase flaxseed support about 15 cents a bushel over the old parity. The 1950 support will be 60 percent of parity, or an estimated \$2.80 a bushel, basis Minneapolis, compared with \$3.99 this year.

Dairy products are guaranteed 75 to 90 percent of the new—and for dairy products—higher parity. But 1950 support rates are expected to be in line with 1949—an average yearly floor of about 60 cents a pound for butterfat, or about 80 percent of new parity.

Loan rates on feed grains are to be kept in line with their feeding value with corn—no change in USDA policy. It will mean only about a 2 cent drop in the 1950 oats loan;

By **PORTER M. HEDGE**

Washington Correspondent for
The Soybean Digest

about 3 cents lower on barley.

Hog price support is left up in the air. The rate is left entirely to Secretary Brannan. He can eliminate hog supports. Or he can put them as high as 90 percent of the new parity, which is about \$1.50 a hundred higher than the old for hogs.

Here again, the expected policy is to keep hog price support floors in line with 90 percent of the old parity. This indicates a hog support from next April through September of about \$15.50 a hundred, on the average, compared with \$15.84 for the six months ending Mar. 31, 1950.

The question of funds is becoming more and more important to support for hogs, eggs, and other perishable commodities. Most of CCC's funds will be tied up, principally storable crops, by mid-1950.

Unless Congress authorizes an increase in CCC's borrowing authority, or a new source of funds is tapped, the day will come when hog, egg, and other perishable crop price supports will have to be dropped sharply, or eliminated.

ALLOTMENTS Compliance with acreage allotments and marketing practices prescribed by the Secretary of Agriculture may be required as a condition of price support for non-basic crops, including soybeans.

There is still talk in USDA of putting acreage allotments on soy-

WILBUR-ELLIS COMPANY

BROKERS OF SOYBEAN OIL AND PROTEINS

Complete Domestic and Foreign Coverage

105 West Adams St., Chicago, Ill.

Telephone: ANDOVER 3-7107

New York

San Francisco

Buffalo

Los Angeles

Seattle

beans next year if the price support is to be kept at around \$2 a bushel. However, the prevailing belief at present is that allotments will not be used for soybeans in 1950.

Corn marketing quota provisions are loosened up so much USDA is not expected to call for corn quotas in 1950, though there is considerable support here for quotas.

Corn acreage allotments next year are certain. A cut in acreage of close to 20 percent from 1949 probably will be sought in the major corn producing counties.

The provision requiring CCC to sell its storable surpluses at not less than 5 percent over current support price won't greatly change the sales policy. Sale of oilseeds for extraction of oil is exempt from this provision. So also are sales for export.

FATS CONCESSIONS. The only major concession on fats and oils made by the United States in the recent trade agreement was to cut the import duty on butter in half during the April-October period—from 14 to 7 cents a pound.

The effect would be, if imports up to the full quotas were allowed, to let 50 million pounds of butter

come in at 7 cents from November through March, and an additional 10 million pounds at the same rate from April through October. The 10 million represent an increase in the quota at the 7 cent rate.

The tariff on edible olive oil in packages less than 40 pounds is lowered from 8 to 4¾ cents a pound; in packages 40 pounds and over from 6½ to 3¼ cents a pound.

Entry of fats and oils products into the United States is regulated by import controls through next June 30. These controls could be extended by Congress, but under the Geneva agreement in 1947 all signers, including this country, have to loosen import restrictions by the end of 1950.

The ad valorem duty on soybean oil shipped to Italy is reduced under the agreement from 95 percent to 25 percent. The rate on soybeans sent to Finland and Denmark is continued duty free.

Haiti makes a slight reduction in its tariff on U. S. butter—down from 2.72 cents a pound or 20 percent ad valorem duty to 2.33 cents a pound or 17.6 percent ad valorem duty.

IN BRAZIL

Production of soybeans has increased more than five times in the last 3 years in Brazil, reports Foreign Agriculture Circular of USDA's Office of Foreign Agricultural Relations.

According to trade sources, production will reach approximately 913,600 bushels in 1949.

Market Street

We invite the readers of THE SOYBEAN DIGEST to use "MARKET STREET" for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here.

Rate: 5c per word per issue.
Minimum insertion \$1.00.

FOR SALE—Anderson Expellers, French Screw Presses all models, as is or rebuilt for specific materials. Pittcock & Associates, Moylan, Penna.

FOR SALE—Scales, 18" x 25" platform, 1200# capacity, \$49.00. 31" x 42" platform, 2000# capacity, \$98.00. Truck scales, 15 ton, \$450.00; 20 ton, \$510.00. Conveyors, bag and box pilers, floor to floor conveyors. Write for information. BONDED SCALE & MACHINE COMPANY, 136 Bellview, Columbus 7, Ohio.

SOYBEANS CYPRESS BRAND FOR SEED



Certified Soybeans

HAWKEYE
WABASH
OGDEN
S.100

Certified Cottonseed
STONEVILLE 2B
PAULA

Serving the
Growers From
NORTH TO SOUTH



VALLEY FARMS

LOCATED GREENE COUNTY, ILLINOIS

CYPRESS LAND FARMS

LOCATED NEW MADRID COUNTY, MISSOURI

Please Address All Correspondence To

314 MERCHANTS EXCHANGE BLDG., ST. LOUIS 2, MO.

MEMBER: MERCHANTS EXCHANGE, ST. LOUIS, MISSOURI.

MILLS — SEND US YOUR INQUIRIES FOR OIL BEANS

Ralston Purina COMPANY'S

5 Soybean Processing Plants or Cash Markets for Soybean Growers.

CIRCLEVILLE, OHIO

ST. LOUIS, MISSOURI

KANSAS CITY, MISSOURI

IOWA FALLS, IOWA

LAFAYETTE, INDIANA

PURINA CHOWS

BUY THE FEEDS THAT USE THE SOYBEAN

Buy Purina Chows

**VALLEY OFFERS
COMPLETE FILTERING
ACCESSORIES**

AGITATORS

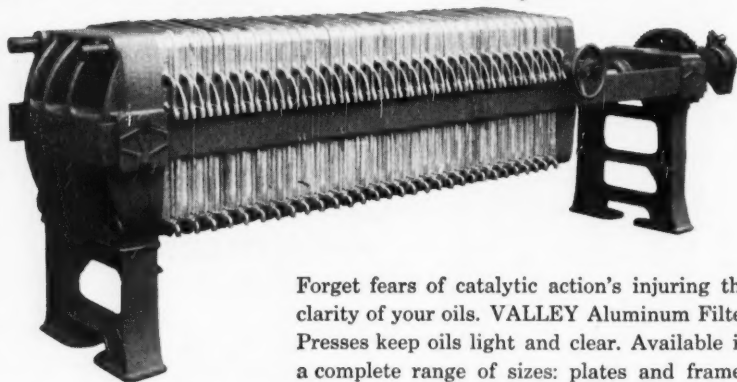
PUMPS

ENGINEERING
SERVICE

SAFE!

**VALLEY Aluminum
FILTER PRESSES**

Won't oxidize oils!



Forget fears of catalytic action's injuring the clarity of your oils. VALLEY Aluminum Filter Presses keep oils light and clear. Available in a complete range of sizes: plates and frames or recessed plates, 6x6"; 12x12"; 18x18"; 24x24"; 30x30"; 36x36"; and 42x42". VALLEY Filter Presses are also manufactured in bronze, stainless steel, cast iron and wood plates and frames.

VALLEY
FOUNDRY & MACHINE
WORKS INC.
FRESNO 18, CALIFORNIA

Send For Free Catalog No. 202

SOYBEAN DIGEST

In The MARKETS

OIL MEAL MARKET WEAKENS

Soybean oil meal sought lower ground during October, reflecting heavy new crop production and a contracted demand.

Soybean prices held at roughly the same level as for September, with the heavy crop movement and weakness in soybean oil meal putting pressure on the market. Price for crude soybean oil in tankcars held at a dead level with only $\frac{3}{4}$ c spread for the month.

After 769 carlots of soybeans arrived in Chicago the week of Oct. 22, receipts dropped somewhat the last of the month. November No. 2 soybeans opened in Chicago at \$2.32 for the month and closed at \$2.23 $\frac{1}{4}$. High was \$2.35 Oct. 11. Low was \$2.21 Oct. 30.

Production of soybean oil meal was heavy as the crop got into full movement. Offerings were well in excess of the slim inquiry much of the month.

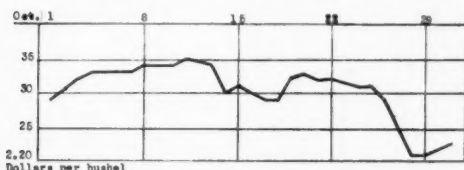
Bulk soybean oil meal, Decatur, opened at \$72, the high and closed at \$58.50, the low for the month.

October prices for soybean oil were steady to slightly easier, with trading on the whole on the light side. A bearish factor was the outlook for greater output of lard and grease.

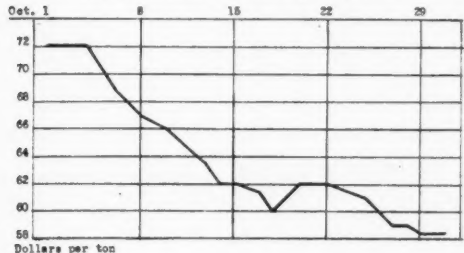
Much of the demand came from industrial users.

The New York Produce Exchange began trading in

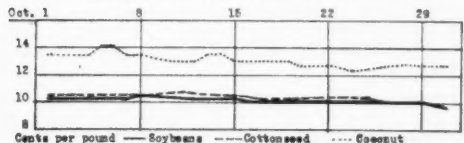
NOVEMBER FUTURES CHICAGO NO. 2 SOYBEANS



BULK SOYBEAN OIL MEAL, DECATUR



CRUDE VEGETABLE OIL, TANKCARS



NOVEMBER, 1949

EIKENBERRY

CONSTRUCTION COMPANY

IMMEDIATE SHIPMENT ON FOLLOWING ITEMS

- Shafer Roller Bearings
- Finished Roller Chain and Sprockets
- Badger Car Movers and Repairs
- Hutton Wheelbarrow Wheels with Pneumatic Tires
- Belting, Buckets, Bolts
- Fairbanks Motors and Falk Motoreducers
- 8" Sectional Spouting

WE CAN FABRICATE

Steel Elevator Legs, Steel Heads, Steel Boots with Take-ups, Steel Spouting, Steel Hoppers, Flip-Flop Valves, Rack and Pinion Gates, Dust Spouts.

Write Us For Quotations — No Obligations

108 E. Mulberry Street

BLOOMINGTON, ILLINOIS

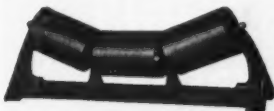
Phone 8905-0



Jeffrey Spiral Sight and installation view.

CONVEYING AT A PROFIT

Almost every plant has something to be moved from one point to another. Jeffrey Conveyors — chain, belt, apron, spiral, electric vibrating — have a wealth of experience behind them. If you want an uninterrupted flow of material, then give Jeffrey a chance to recommend the right unit for the job at hand. Also feeders, bucket elevators, car pullers, bin valves, chains and transmission machinery. Jeffrey has the cure — if you want to be sure. Write today.



Left — A Jeffrey 3-pulley belt idler equipped with Timken bearings. This is the type of idler that has been used successfully on hundreds of big jobs where high-speed production is the demand.

THE JEFFREY MFG. CO.

792 North Fourth Street

Columbus 16, Ohio

Baltimore	Chicago	Denver	Jacksonville	Pittsburgh
Birmingham	Cleveland	Harlan	Milwaukee	Scranton
Boston	Cincinnati	Houston	New York	St. Louis
Buffalo	Detroit	Huntington	Philadelphia	Salt Lake City

Jeffrey Mfg. Co., Ltd., Head Office & Works: Montreal



RIDING ON A MERRY-GO-ROUND DOESN'T GET YOU ANY PLACE

You can keep grain off the "Merry-Go-Round" by equipping your elevator legs with the

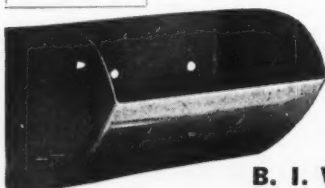
CALUMET SUPER CAPACITY ELEVATOR CUP

BIMETAL METAL PRODUCTS
YOUR BEST BUY
In complete elevator legs, heads, boots and elevator legging, screw conveyor troughs, bins and custom built sheet metal work to specifications.

That's a fact! For the cup with the Logarithmic Curve is scientifically designed to scoop up super capacity loads in elevator boot and to discharge them completely at elevator head. Yes, the Calumet unloads its entire load at the proper point. Absolutely no backlegging.

**Immediate
Delivery on
Most Sizes**

ASK YOUR JOBBER
Step up operation with the cup that does not give grain a "Merry-Go-Round" ride.



B. I. WELLER CO.

Weller Pat. No. 1944932 327 S. LaSalle St. Chicago 4, Ill.
Thirty-five years of Service to the Grain Industry

Here are three fascinating books by David Fairchild...

THE WORLD WAS MY GARDEN

An account of the author's travels all over the world in search of rare and useful plants. Illustrated - - - - - \$5.00

GARDEN ISLANDS OF THE GREAT EAST

The story of the Fairchilds' trip through Indonesia and the Spice Islands. Their transportation was a Chinese junk. Illustrated - - - - - \$5.00

THE WORLD GROWS ROUND MY DOOR


The history of David Fairchild's famous experimental garden, The Kampong, at Coconut Grove, Fla. Illustrated - - - - - \$5.00

And a book by David Fairchild's daughter, Nancy Bell Bates....

EAST OF THE ANDES AND WEST OF NOWHERE

A Naturalist's Wife in Colombia. The mountains, rivers, swamps, animals and people in a primitive section of South America. Illustrated - - - - - \$3.50

These books can be purchased directly from the
SOYBEAN DIGEST, Hudson, Iowa



INOCULATION

for SOYBEANS

**Made only from strains of bacteria
proven to fix more nitrogen**

Also Patented UNICULTURE for Clovers and Alfalfa
3 Cultures in One Can

KALO INOCULANT CO., QUINCY, ILL.

new prime crude soybean oil futures to replace the old contract. The contract unit is 60,000 pounds. Trading is through the 12 months.

Under the new contract a maximum red bleached color of 3 1/2 percent is allowed; and a maximum refining loss of 7 percent, with 3/4 percent premium for each percent less loss, figured fractionally at contract settlement price. Deliveries are f.o.b. Decatur for eastern destination, out of licensed bonded warehouses.

The change in specifications in the soybean oil contract on the New York Exchange was made at the request of the trade.

Crude soybean oil in tankcars opened at 10 1/4c and closed at 9 3/4c. The high was 10 1/4c Oct. 8.

MEMPHIS SOYBEAN OIL MEAL FUTURES CLOSING OCT. 31*

Decatur sacked basis, per ton: December, 63.00@63.25; January, flat 63.00; March, flat 62.50; May, 61.25@62.25; July, 61.10@61.50; sales, 2,500 tons.

NEW YORK CRUDE SOYBEAN OIL FUTURES OCT. 31*

New Contract: Nov., 9.90b; Dec., 8.80b; Jan., 8.70b; Feb., 8.80n; Mar., 8.70b; Apr., 8.80n; May, 8.60; June 8.70n; July, 8.55; Aug., 8.65n; Sept., 8.55; Oct., 8.65n. Sales 4 contracts switching old to new.

*Reported by Chicago Journal of Commerce.

● **STOCKS ON FARMS.** October 1 stocks of old soybeans on farms are estimated at 2.1 million bushels, according to the Oct. 1 crop report of U. S. Department of Agriculture. This is above the 1.8 million bushels on farms a year ago and is about the same as on October 1, 1946.

With these exceptions farm stocks are the lowest in the 7 years of record.

Farm disappearance for the period July 1 to October 1 this year was 7.3 million bushels compared with only 2.5 million bushels for the same period last year, and was the heaviest for this period since 1943, the first year for which data are available.

As usual, most of the farm stocks of soybeans are concentrated in the North Central states. The six states—Ohio, Indiana, Illinois, Minnesota, Iowa and Missouri—had on hand about 86 percent of the total October 1 farm stocks of old soybeans.

STOCKS ON FARMS ON OCTOBER 1

Soybeans for beans (old crop)							
State	Average 1943-47	1948	1949	State	Average 1943-47	1948	1949
N. Y.	26	6	6	Del.	18	3	10
N. J.	9	12	4	Md.	27	4	36
Pa.	41	19	20	Va.	36	43	35
Ohio	452	38	372	W. Va.	0	0	0
Ind.	344	278	156	N. C.	48	70	36
Ill.	725	327	393	S. C.	3	8	13
Mich.	88	13	6	Ga.	1	1	1
Wis.	22	7	10	Ky.	14	18	11
Minn.	119	207	234	Tenn.	7	19	7
Iowa	947	438	354	Ala.	3	4	5
Mo.	205	198	318	Miss.	20	7	12
N. Dak.	3	1	2	Ark.	52	17	26
S. Dak.	9	17	14	La.	9	3	2
Nebr.	10	2	13	Okla.	1	0	0
Kans.	50	28	38	U. S.	3,290	1,838	2,134

● **SOYBEAN GLUE.** Consumption of soybean glue by the softwood plywood industry in August was 3,045,000 lbs. compared with 1,532,000 lbs. in July; and 2,334,000 lbs. in August 1948, reports Bureau of the Census.

Consumption of phenolic resin glue in August was 2,979,000 lbs. Total consumption of all glues by the plywood industry in August was 6,595,000 lbs. compared with 3,607,000 lbs. in July and 7,224,000 lbs. in August 1948.

Stocks of soybean glue totaled 1,407,000 lbs. Aug. 31 compared with 1,327,000 lbs. July 31; and 1,586,000 lbs. Aug. 31, 1948.

SOYBEAN DIGEST

● **OIL MILL PRODUCTS.** Reported by Bureau of Census, Department of Commerce.

SOYBEANS: RECEIPTS, CRUSHINGS AND STOCKS AT OIL MILLS, BY STATES, AUGUST 1949—JULY 1949
(Tons of 2,000 pounds)

State	Receipts at mills		Crushed or used		Stocks at mills	
	August 1949	July 1949	August 1949	July 1949	Aug. 31, 1949	July 31, 1949
U. S.	228,685	283,378	406,518	459,061	196,483	374,316
Arkansas	(*)	(*)	5,442	7,133	(*)	(*)
Illinois	92,849	110,677	165,861	194,293	68,605	141,617
Indiana	(*)	19,695	36,014	33,962	(*)	22,960
Iowa	59,061	71,109	82,298	84,398	36,002	59,239
Kansas	1,987	8,878	7,892	9,635	2,761	8,666
Kentucky	1,959	5,173	11,300	10,502	9,340	18,681
Minnesota	11,888	11,535	14,889	19,193	3,612	6,613
Missouri	5,669	9,512	23,233	19,739	13,050	30,614
Nebraska	(*)	(*)	(*)	(*)	(*)	(*)
North Carolina	(*)	849	2,045	1,812	(*)	2,340
Ohio	17,177	38,832	43,230	65,032	38,392	64,445
Oklahoma						
Texas						
All other	38,095	7,118	14,314	13,452	24,721	19,141

* Included in "All other" to avoid disclosure of individual operations.

SOYBEAN PRODUCTS: PRODUCTION AND STOCKS AT OIL MILL LOCATIONS, BY STATES, AUGUST 1949—JULY 1949

State	Crude oil (thousand pounds)				Cake and meal (tons)			
	Production		Stocks		Production		Stocks	
	Aug. 1949	July 1949	Aug. 31, 1949	July 31, 1949	Aug. 1949	July 31, 1949	Aug. 31, 1949	July 31, 1949
U. S.	136,015	155,148	26,574	45,624	318,938	357,592	20,376	21,266
Arkansas	1,535	2,124	(*)	712	4,306	5,766	(*)	679
Illinois	56,866	66,714	9,079	17,320	123,300	143,553	5,542	6,693
Indiana	12,238	11,267	1,527	4,524	28,551	26,953	1,445	1,931
Iowa	28,069	29,383	6,937	10,126	67,856	69,608	4,757	3,387
Kansas	2,600	3,172	1,009	921	6,363	7,926	(*)	(*)
Kentucky	3,950	3,832	526	(*)	8,905	8,315	654	283
Minnesota	4,871	6,209	912	1,388	12,226	15,538	212	472
Missouri	7,292	6,439	867	1,519	18,956	15,981	2,312	1,948
Nebraska	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)
N. Carolina	375	446	470	1,070	1,624	1,329	(*)	385
Ohio	13,568	21,523	2,610	5,287	34,754	51,425	2,272	2,821
Oklahoma							(*)	(*)
Texas							(*)	(*)
All other	4,451	4,039	2,637	2,757	12,097	11,198	3,182	2,667

* Included in "All other" to avoid disclosure of individual operations.

PRIMARY PRODUCTS EXCEPT CRUDE OIL, AT CRUDE OIL MILL LOCATIONS: PRODUCTION, SHIPMENTS AND TRANSFERS AND STOCKS, AUGUST 1949—JULY 1949

Products	Production		Shipments and transfers		End of month stocks	
	August 1949	July 1949	August 1949	July 1949	Aug. 31, 1949	July 31, 1949
SOYBEAN:						
Cake and meal ¹	318,938	357,592	319,828	353,820	20,376	21,266
Leithin ²	954,800	1,020,037	1,064,779	1,033,995	982,578	1,092,557
Edible soy flour, full fat ¹	345	(*)	306	(*)	148	109
Edible soy flour, other ¹	6,585	8,742	6,920	8,688	1,213	1,548
Industrial soy flour ¹	(*)	(*)	(*)	(*)	(*)	(*)

¹ Unit of measure in tons.

² Unit of measure in pounds.

* Not shown to avoid disclosure of individual operations.

228,685 tons of soybeans were received by mills in August compared with 283,378 tons in July. 406,518 tons of soybeans were crushed or used in August compared with 459,061 tons in July.

● **SOYBEAN INSPECTIONS.** Inspected receipts of soybeans in August were the largest of record for that month and considerably above average but showed a seasonal decrease from the preceding month, according to reports to the Department of Agriculture. Receipts for August totaled 4,213 cars compared with 6,153 cars in July and the August average of 1,416 cars for the crop years 1942-46.

Inspected receipts for October through August totaled 104,069 cars compared with 79,408 cars for the same months last season.

The quality of the soybeans marketed in August remained about unchanged, 74 percent grading No. 2 or better compared with 75 percent in July. Seventy-four

MARIANNA SALES COMPANY

MEMPHIS 1, TENN.

Dealers in
**Soybean and Cottonseed
Products**

Brokers in
**Soybean and Cottonseed
Meal Futures**

Members
Memphis Merchants Exchange
American Feed Manufacturers Association
Tel. 55707 L. D. 364

Specify

MENTE BURLAP, COTTON & PAPER BAGS

New and Used — Printed and Plain

FOR YOUR
SOY BEANS * GRAIN * PEAS!

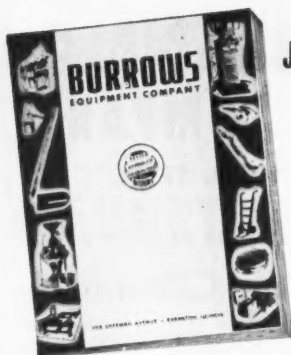
FOR 65 YEARS
GOOD SERVICE AND GOOD BAGS

MENTE & CO., INC.

Isaac T. Rhea, Pres.

HOUSTON NEW ORLEANS SAVANNAH

New York Office: 458 5th Ave.



More THAN JUST "ANOTHER" CATALOG!

The big, new Burrows catalog is not only the most comprehensive volume of its kind ever published . . . it not only makes available the world's most complete source of supply for equipment of all kinds for Grain Elevators, Feed Plants and Seed Houses it also brings you page after page of

HELPFUL INFORMATION

- Such as:
- How to calculate bu. in cylindrical bins.
 - Care of fire fighting equipment.
 - Grain insects and their control.
 - Increasing the service of chain drives.
 - Directions for installing elevator belts.
 - Calculating speed of pulleys, sheaves and gears.
 - Grain grading and testing specifications.
 - How to grade grain.

And many other worth knowing facts. We shall be happy to send you a copy

FREE UPON REQUEST

You'll find it mighty helpful.

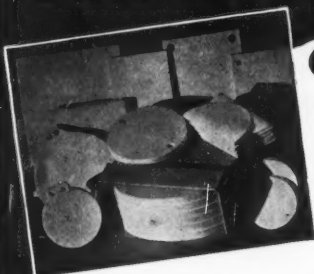
BURROWS

EQUIPMENT COMPANY

1314-D SHERMAN AVENUE

EVANSTON, ILLINOIS

Unsurpassed for Dependable Accuracy



Filpaco
**FILTER
PAPERS**

For filtering the crude soybean oil, for use with activated carbon and fuller's earth in the bleaching step; and for the final polishing and clarification.

These filter papers are made from the finest materials available under rigid specifications for accuracy and dependability.

Samples furnished upon request for experimental purposes.

Other "FILPACO" Products:

Filters, stainless steel storage and mixing tanks, fillers, pumps, conveyors, fittings, filter paper, filter cloth, asbestos pads and filter aids.



THE FILTER PAPER CO.

2402 S. Michigan Ave.,
Chicago 16, Illinois

percent graded No. 2 or better October through August compared with 37 percent a year ago.

Inspections of soybeans in August included the equivalent of 118 cars inspected as cargo lots and about 43 cars as truck receipts.

Inspected receipts of soybeans in September were more than double those in August or in September a year ago indicating an earlier movement of new crop soybeans. Receipts for September totaled 8,756 cars compared with 4,213 cars in August and 3,420 in September 1948. Inspected receipts for October through September totaled 112,825 cars compared with 82,828 cars for the same months last season.

The quality of the soybeans marketed in September improved over August, 89 percent grading No. 2 or better compared with 74 percent in August. Seventy-five percent graded No. 2 or better October through September compared with 87 percent a year ago.

Inspections of soybeans in September included the equivalent of 23 cars inspected as cargo lots and about 279 cars as truck receipts.

● **FACTORY USE SOYBEAN OIL.** Factory production of crude soybean oil totaled 136,015,000 lbs. in August; 155,148,000 lbs. in July. Production of refined oil totaled 135,106,000 lbs. in August; 110,190,000 lbs. in July, reports Bureau of the Census.

Factory consumption of crude soybean oil totaled 145,924,000 lbs. in August; 122,032,000 lbs. in July. Factory consumption of refined soybean oil totaled 141,462,000 lbs. in August; 97,345,000 lbs. in July.

Factory and warehouse stocks of crude soybean oil totaled 71,925,000 lbs. Aug. 31; 90,831,000 lbs. July 31. Stocks of refined soybean oil totaled 76,384,000 lbs. Aug. 31; 92,807,000 lbs. July 31.

● **SOYBEAN STOCKS.** Production and Marketing Administration's commercial grain stock reports for Oct. 3-24.

(1,000 bu.)

	Oct. 3	Oct. 10	Oct. 17	Oct. 24
Atlantic Coast	161	171	239	215
Gulf Coast	1	68	151	187
Northwestern and Upper Lake	24	67	238	461
Lower Lake	129	377	879	2,011
East Central	128	500	784	1,114
West Central, Southwestern & Western	26	300	814	1,404
Pacific Coast	0			
Total current week	460	1,483	3,165	5,392
Total Year ago	130	715	1,891	4,145

● **SOYBEANS UNDER PRICE SUPPORT.** The U. S. Department of Agriculture has announced that through September farmers had put about 300 million bushels of 1949-crop wheat, barley, oats, rye, flaxseed, soybeans, corn and grain sorghums under Commodity Credit Corporation price support. This compares with 200 million bushels for the same period last year.

USDA reports 1,644,671 bushels of soybeans placed under price support in the July-September period, as follows: loans, farm stored 249 bu.; warehouse stored 49,274 bu.; purchase agreements 1,595,148 bu.

● **SHORTENING SHIPMENTS.** Reported by Institute of Shortening and Edible Oils, Inc., in pounds.

Week ending Oct. 1	4,167,462
Week ending Oct. 8	3,429,814
Week ending Oct. 15	4,653,651
Week ending Oct. 22	4,955,034

Grand total of edible oil and shortening shipments in September was 238,461,000 lbs.

SOYBEAN DIGEST

SEES THREAT TO FATS, OILS MARKETS

A Senate committee is raking up a problem that has farm leaders on the edges of their chairs. It's the way the new chemical wonders are knocking the bottom out of the market for animal fats and oils.

Already, and it's only the beginning, the farmers' pocketbook has been pinched.

The committee headed by the handsome, white-haired Guy Gillette of Iowa was prowling around for new markets for farm products. It ran slam-bang into the competition from the chemical industry.

The first scare was a sobering statement by George L. Prichard, the Department of Agriculture's fats and oils chief. He told the Senators, "The baking industry's consumption is about 40 percent of the lard and shortening production. It's estimated that if the chemical softeners come into widespread use in the baking industry 600 million to 700 million pounds of shortening, lard,

butter, and oils will be cut from the bakers' annual consumption of fat. This is equal to soybean production from 3.5 million acres."

The next shiver was a report on the way that the frothy chemical detergents are shoving soaps aside. Soap accounts for 80 percent of the inedible fat consumption, or about 1.5 billion pounds a year. Last year, detergents were 25 to 30 percent of the household soap sales, and it's figured this will go up to 50 percent in 3 years. Soap sales dropped 11 percent last year.

The Senators are mulling over a three-point program to keep up the farmers' take from fats and oils. It is:

1. Writing in the pure food law a standard of nutrition for bread. This would require a high percent of animal fats.
2. Writing a labeling law for soaps and detergents.
3. Closing the door on imports of fats and oils. The farm bloc is up in arms over tropical fats and oils coming in, largely from Central America.—*Tris Coffin in Washington Times-Herald.*

THE PRESS

USED BAGS

COMPLETELY RECONDITIONED
AT LOWEST PRICES

Complete assortments of reconditioned used and surplus bags ready for prompt shipment.

Processed and reconditioned in the foremost modern plant in the Midwest. Each bag is vacuum cleaned, sorted, graded, mended and inspected before baling ready for shipment.

We have the type and size of bag that you want and can supply you immediately.



Bag printing in colors. Your own label or we submit sketches and ideas.

FOR PROMPT SERVICE
WRITE—WIRE OR
TELEPHONE COLLECT
2-8355

MIDWEST
BURLAP AND BAG CO.

213 THIRD STREET • DES MOINES, IOWA

Country Won't Be Cowless

The butter people are displaying a somewhat peculiar and pious concern over the awful possibility that consumers will have to pay more for the ready-colored oleo than they do for the pallid product. They make the broad claim that they have found colored oleo selling 21.8 cents a pound higher than the uncolored product in states where the coloring is legal.

The oleo clan counters with the charge that this is a neat job of juggling statistics.

Frankly, we see no particular point in arguing prices. It is for the consumers to decide what they want. The housewife should have the right to buy yellow oleo if she wants it just as she does those retinted Florida oranges. If she craves a pair of pastel panties, she doesn't have to buy a pair of white ones and take them home and give them the Tintex treatment.

We don't believe colored oleo will usher in a cowless economy.

Who knows but what, forsooth, the measure will increase butter sales, and thereby help the very people who are now opposed to it?—*Ohio State Journal.*

44%

Del-mi-co SOYBEAN OIL MEAL

Recent tests prove Soybean Oil Meal cooked at 15 lbs. steam pressure is superior in feeding values to dry toasted meals.

All our meal after cooking passes through toaster to conditioner. Frequent by-passes avoid regrinding, thus preventing floury meal, and gives it a very uniform texture.

Terminal facilities for all Grains including Soybeans, Corn, Wheat and Oats.

Delphos

GRAIN & SOYA PRODUCTS CO.

Delphos, Ohio

ARE KILLING VITAMINS IN SOY FLOUR

TO THE EDITOR:

About 100 years ago, steam driven rice milling machinery was introduced into the countries of South East Asia. No doubt the introduction of this machinery increased tremendously the efficiency of milling and saved a great deal of labor, but unfortunately, the mechanization of rice milling was followed by outbreaks of beriberi which is still responsible for the death of many thousands of people in the Far East, not to mention millions suffering from sub-clinical deficiency.

Soybeans have always been used for food in China, Japan and Korea. They have constituted a very important supplement to the monotonous and deficient rice diet. The beans are either ground to produce full fat soy flour or processed to produce a great variety of products for human consumption. The oriental types of technology may be time-consuming and inefficient, but they generally do not destroy the essential nutrients in the soybean.

The production of high quality soy flour and soybean oil in the United States may be considered as very important advances in the soybean technology. So far the processes have been extremely successful. We have recently noticed articles in the Soybean Digest concerning the use of ethyl alcohol for the extraction of oil from the soybeans.

We would like to call the attention of soybean technologists in this country to the fact that extraction of soybeans with alcohol is probably the most efficient method of preparing a flour which is entirely deficient in the important B vitamins. In spite of the fact that the alcohol extraction process may have economic and technical advantages, the adoption of this method by peoples who consume relatively large quantities of soy products will be harmful from the nutrition point of view.

The problem may not be very serious at the present stage of development. However, if this type of flour be shipped to the East in large quantities for human consumption or if this method become wide-

ly adopted by the Far Eastern countries to replace the conventional methods of soybean utilization, then it is not impossible that vitamin deficiencies might arise among these people such as in the case of the mechanization of rice milling.

For the above reasons, we would like to present this problem to the attention of the soybean technologists.—P. C. Hsu and A. J. Nolte, nutrition division Food and Agriculture Organization of the United Nations, Washington, D. C.

Soy Milk in Africa

TO THE EDITOR:

I have been given your address as a very likely source of information.

We have a home for rescued children of leprosy parents. Many of these children are very undernourished when they come to us, and with many it is a real battle to bring them through. Also we have a lot of little babies—leper free but of leper parents.

These babies and children *must* have milk. This has been a big problem to us. We have been using "Klim," but it some times is almost unbuyable.

Having heard of soybean flour and milk made from the flour I thought it might be possible to do something about it. I wonder if you could give me some practical information re the making of milk from the soybean. We can grow the soybeans here and we can also buy them.

Thus if the process is not too difficult or complicated we could put said information to some good practical use.—W. J. Dawn, *Heart of Africa Mission, Belgian Congo, Africa.*

Soy milk has been used to good advantage in child feeding in areas where animal milk is unobtainable, notably China.—Editor.

Values of MPF

TO THE EDITOR:

We hear some wierd things . . . One woman complimented us on the fact that MPF when fermented was "most stimulating." Another gentleman complained that "since going on a diet of MPF, Viets and other things" he had done nothing but dream about women.

One woman reported that all her life she had suffered from split fingernails but that since eating MPF they didn't split any more. One gentleman over 60 said he had been eating MPF twice daily and he was sure that "without MPF he would not still be working as a plumber."

Sometimes I think MPF is better than we think it is.—Ernest R. Chamberlain, *secretary Meals for Millions Foundation Inc., 648 S. Broadway, Los Angeles 14, Calif.*

MPF is a highly nutritious low-cost meal put out by Meals for Millions Foundation for the relief of starvation among undernourished peoples the world over. Low income people in the U. S. also find it a valuable food. MPF contains a high proportion of soy products.

—Editor.

More on Food

TO THE EDITOR:

You are doing a great work with the Soybean Digest.

I do think its usefulness would be still further extended if more space was given to discuss the value of soybeans for human consumption. Among other things, tasty recipes and healthful hints on how to prepare this wonder food should be included so more people could receive the benefits they have to offer.

The series of five articles by Dr. Smith on the "Oriental Uses of Soybeans as Food" was very good. They contain much valuable information. Some of this I intend to pass on as a means of creating more interest in using soybeans in the daily menu.—Charles R. MacIvor, *advertising manager, Life & Health, Takoma Park, Washington 12, D. C.*

Hawkeye

TO THE EDITOR:

The Hawkeye soybeans around here look much better than a year ago. They have attained good height, but I think the dry weather will cut the yield quite a little. They seem not to have a very big proportion of three to a pod this year. Last year they were so short, but this year most of them were from 3 to as much as 4½ feet.

Had we had the rain in July and August instead of being so very dry they should have produced a very large crop.—Ivan E. Kivell, *Rt. 1, Greene, Iowa.*

LETTERS

Get all the facts yourself . . . mail coupon today . . .

**CUT COSTS,
AVOID LOSS
without delay!**

Yes . . . you can reduce your soybean storage costs with BS&B Bolted Steel Grain Tanks. Cost per bushel is lower by far than concrete. Many owners report more than 25 years' service with upkeep amounting to only a coat of paint now and then. Steel storage earns cheapest insurance rates, too. With your own storage you can maintain a reserve to avoid plant or mill shutdowns.

Beans, oil, mash or solvents . . . all can be safely stored with BS&B Bolted Steel Tanks. Moisture

storm, insect and

Special Products Div., Section BTG-51,
BLACK, SIVALLS & BRYSON, INC., Power and Light Building,
Kansas City 6, Missouri

Rush all information about BS&B Bolted Steel Grain Tanks. We are interested in _____ bushel capacity.

NAME _____

FIRM _____

ADDRESS _____

STATE _____

CITY _____

rodent-proof steel storage is your assurance against loss.

Remember, BS&B is the only fabricator of this type of storage maintaining its own skilled erection crews. In a week's time you can get delivery. As little as two days' time will see your storage complete . . . right on your own foundation!

Capacity ranges from 10,000 to 50,000 bushels. You can tailor your storage to your needs. Act today . . . mail the coupon above for full details!

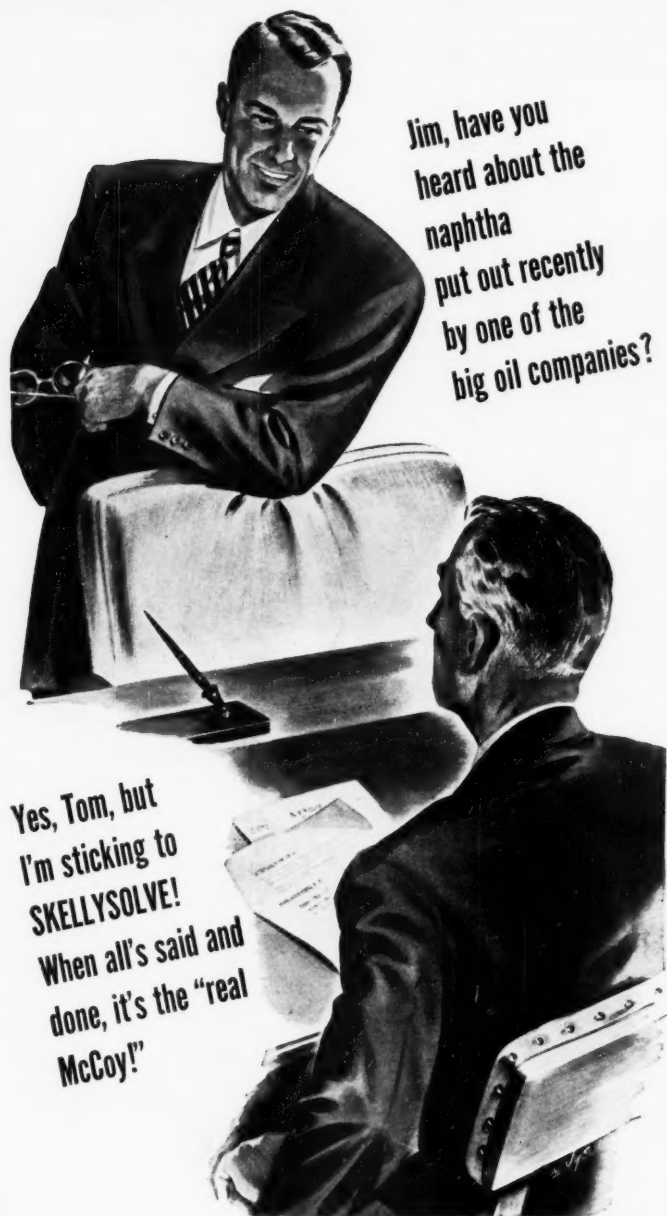
BS&B

**bolted steel
grain tanks**



UNIVERSITY MICROFILMS
313 N. FIRST ST.
ANN ARBOR, MICHIGAN

C



Jim, have you
heard about the
naphtha
put out recently
by one of the
big oil companies?

Yes, Tom, but
I'm sticking to
SKELLYSOLVE!
When all's said and
done, it's the "real
McCoy!"

"DOC" MacGEE SAYS:

There
must be

a reason for the wide and growing preference that purchasing agents, chemists, superintendents and managers have for SKELLYSOLVE. They know they can't go wrong by ordering SKELLYSOLVE for their operations. Why? Because SKELLYSOLVE'S unvarying high quality, dependability, purity, and economy are *proved!*

Skelly Oil Company pioneered the large scale production of the hexane, heptane, and octane type naphthas from natural gas . . . began back in 1930. A development that has provided special industrial naphthas with a quality exceeding anything ever known in the petroleum industry before.

High-quality SKELLYSOLVE has enabled the rubber, oil and fat, ink and other industries to save money, improve operations, and produce better products. For proof of this, consider the fact that numerous plants have switched to SKELLYSOLVE from the competitive naphthas or solvents they were using—and that more plants are changing to SKELLYSOLVE every day.

Yes, SKELLYSOLVE is giving more satisfactory results in more and more industrial operations. Remember this when you hear of other naphthas claimed to be "just as good as" or even "better than" SKELLYSOLVE. Remember that, when all is said and done, SKELLYSOLVE is the "real McCoy!"

Skellysolve



SOLVENTS DIVISION, SKELLY OIL COMPANY, KANSAS CITY, MO.